developments • research • significant articles • statistics • personalities • features

The·Northwestern·Miller

MILLING PRODUCTION SECTION

FEBRUARY 11, 1942

IN TWO SECTIONS—SECTION TWO

Let's Wake Up! 3

Rebuilt Ball Bearings 6

Use a System in Choosing Your Mill-Mix 7

So You Want to Buy a Machine! 8

Products of Milling Operations—Part Two 10

Recipe for Self-Rising Flour Sales 12

Cooling a Diesel Engine 16

The Meaning of Solubility 17

Bugs Are "Tough Customers" 20

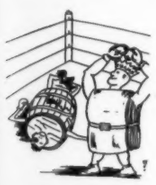
Do You Know? 20

Short System Flow 23

Same Mill—But Different Wheat 24

Production Highlights

K. O'd.—If the old flour barrel recently entertained a desire to regain his flour packing crown with the backing of Mr. Priority, he was knocked out before he started. Late in January—a month after the OPM placed all stocks of burlap under direct allocation control—manufacturers of textile bags announced that for the time being, at least, no producer of flour or feed would be prevented from obtaining sufficient bags. They pointed out that an unbroken supply of flour and feed was vital to the war effort. Bags, they stated, were essential in maintaining that supply. Since raw materials for textile bags were available in ample quantities at primary sources, the manufacturers saw the problem principally as a matter of proper allocation. And the authorities, they said, were fully aware of the needs of the industry.



DISEMBITTERED. — The soybean, much-sung-about possessor of many nutritious virtues, has now been subjected to a metamorphosis which, it is said, "dehulls, disembitters and cooks the beans all at once." The patented apparatus "explodes" the beans after cooking them for a brief period under high steam pressure. W. J. Plews, of Chicago, the inventor, says that the exploded bean is more palatable for human consumption.

SUBSTITUTED.—Because the words "nicotinic acid" and "nicotinic acid amide" bring unpleasant visions to the uninformed, these designations of one of the vitamins added to enriched flour will be replaced by the intriguing appellations "niacin" and "niacin amide." The change was recommended by the Committee on Food and Nutrition of the National Research Council, and was accepted Jan. 19 by Federal Security Administrator Paul V. McNutt.

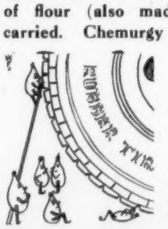
PROTECTED. — This emblem — the American eagle poised protectively over a cargo ship—has been presented by its designer, Walt Disney, to the Department of Agriculture for voluntary use by food processors as a symbol of food as a powerful weapon in winning the war—and of building the right kind of world when the war is won. The four stars in the design represent the "four freedoms" pledged in the Atlantic Charter and later by the United Nations.

URGED.—To Philip W. Pillsbury, president of Pillsbury Flour Mills Co., the attitude of the milling industry today parallels closely its viewpoint when the United States entered the first World War. He feels that millers have been complacent about their ability to meet new demands upon their plants. They should, he urged, inaugurate immediately a program of modernization that would prepare the mills for what he believes will be a greatly expanded production program in coming years. . . . Mr. Pillsbury discussed these problems before a meeting of A.O.M. District 4 last month.

LAUNCHED.—In co-operation with club women, nutritionists and others the Federal Security Agency is conducting a survey in Richmond, Va., to see what the average Virginian eats and what measure of nutrition is represented in his daily diet. Enriched flour and bread will occupy a place in the undertaking, but the plan is to get an over-all picture of how the people react to the need for better food generally. If the program is regarded as successful, other states will be surveyed.

QUESTIONED.—Car liner paper is becoming difficult to obtain, and millers are seeking ways to curtail its use. The Millers National Federation, in an effort to learn what representative concerns are doing about the matter, has come to the following conclusions: If sacks are not covered, cinder damage is often increased. Some customers complain about the omission of liner and cover paper. However, certain practices may be safely followed. Among these are: no paper on the floor, sides or over feed shipments; no side or covering paper for flour in jutes or grain bags, except in old box cars; no lining or covering for export shipments.

STRETCHING. — Wheat, that most useful of grains, may one day be called upon to provide the tires on which a load of flour (also made from wheat) is carried. Chemurgy research men have announced a process by which ten lbs of synthetic rubber can be made from a bushel of wheat or corn. Thus our total annual consumption of rubber could be made from about 120,000,000 bus of the grain. A House agriculture subcommittee, in reporting the development, was enthusiastic, but a U.S.D.A. spokesman said that the whole picture was probably being stretched a bit. He added, however, that progress had been made.



Infestation *precedes* Contamination . . .

Stop It Before It Starts!!!

TREAT ALL FLOUR MILLED WITH
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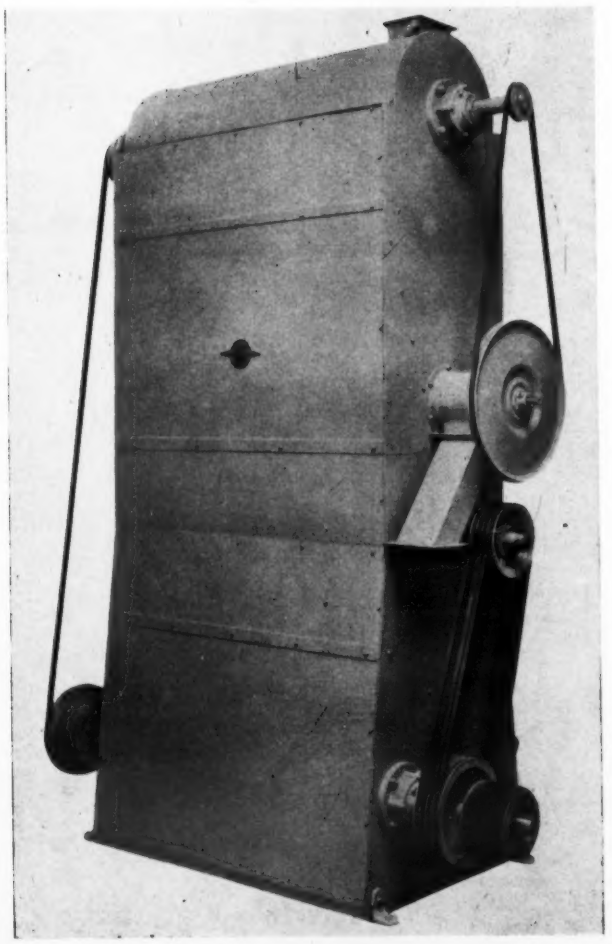
BEFORE PACKING!



Motor Driven Forster Insurator

KEEP 'EM TURNING!

Eminent entomologists say that the eggs of insects which infest and contaminate flour can pass through the entire milling system—between the working break rolls and even between the smooth rolls that are reducing middlings under heavy pressure—wholly unharmed. They are protected by the "cushion" of stock. . . . . But the flour affords no protection to the eggs it may contain when it is passed through the FORSTER INSURATOR. Not pressure but *SHOCK* is the active agent.

The FORSTER INSURATOR does not rupture starch granules, and it does not, therefore, impair the diastatic properties of the flour. Ask us for laboratory analyses.

IT WOULD BE WISE TO ACT PROMPTLY, BEFORE FLOUR WHICH MAY CONTAIN INSECT EGGS GETS INTO STORAGE

Details for the Asking.

The FORSTER MANUFACTURING CO., Inc.

WICHITA, KANSAS, U. S. A.

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Advertising Pages from
The Northwestern Miller of 1892

By Edgar S. Miller

Technical Editor of THE NORTHWESTERN MILLER

THE miller—meaning that composite personage whose task it is to garner and husband what in its natural state is a substance crude and virtually unedible, and by processing provide a product easily stored and readily converted into food for human kind—has one thing in common with the principal character of a poem whose author is probably better known to the world as the man who wrote the words to the song, "On the Road to Mandalay." The author's name was Kipling, and the "principal character" referred to was called "Tommy Atkins." The significant lines of the poem go something like this:

It's Tommy this and Tommy that,
and "Tommy go away!"
But it's "Howdy, Mr. Atkins," when
the band begins to play.

When the band begins to play, there is first of all a warm surge of heroic thought and impulse, but underneath the surface, too strong to be denied for long, are thoughts of possible privation, hardship and suffering. "Mr. Atkins" becomes a highly important personage, not just because of the glamour of his uniform but because of the expectation that he can and will forefend the evils consequent upon defeat. Nothing is too good for him—at least in theory and while the threat of calamity appears imminent.

There may be a good deal of superficiality in this attitude, but the realization that the fighting man must be well fed as well as well accoutered has grown apace during the last half century. The modern soldier has small chance to support himself in the field by foraging, and still less of defending himself and his country with the obsolete side arms of Napoleonic times. To reiterate that wars are fought and won—or lost—not by armies alone but by the populace would be the acme of triteness, but even so, it may be doubted there is anything like a full appreciation of the fact that adequate and nourishing food is essential not only to the armed forces but to the men and women who must provide the accouterments of war.

So when the bands begin to play in earnest, and the "Battle Hymn of the Republic" drowns out the boogie-woogie, people are wont to give serious thought to ways and means for providing the power of muscles and will for their fighting men and for themselves. Many things considered essential in normal times (and even defended staunchly under any circumstances as props to a sagging morale) seem less important when measured anew and evaluated on the basis of their proved worth.

In such an appraisal, bread—and the flour from which it is made—never suffers by comparison. On the contrary, whenever sophistication must give way to plain common sense, wheat flour immediately takes top rank, not merely as an essential but as the one nutritive substance capable of sustaining health and vigor in civilized man with the assistance of an absolute minimum of other essential foods. It is then that the miller begins to share with "Tommy Atkins" the solicitude of the populace, though it must be admitted that this solicitude is of a much less personal nature. This is only to be expected, for little has been done to make people realize that finished flour is much different from wheat.

It might be said that people instinctively think of white flour as a basic food in times of threatened emergency, but this is not precisely true. An instinct is something that is independent of reasoning, instruction or acquired knowledge. It is therefore inherent and "natural." But man does not seek bread as the newborn animal seeks its mother's milk. For bread—or flour or wheat—is not a "natural" food. It is no more "natural" than clothing, or fire, or tools.

The ingenuity of man has enabled him to clothe himself against the rigors of an inhospitable climate and to utilize fire to add still further to his comfort and his efficiency, first by helping him to keep warm and, later, to make tools and build a million things far beyond the capabilities of any of the other animals. Through this ingenuity man was able to cultivate the earth and process and store foodstuffs which made him practically independent of his environment over considerable periods of time, and there cannot be the slightest doubt that the most important of these was "white" flour—flour differentiated from mere crushed wheat by its comparative whiteness and by the properties permitting long storage and utilization at any time as a wholesome and nearly complete food.

Above all this, however, the fact remains that with the first serious threat of war Judy O'Grady and the colonel's lady commonly entertain the conviction that it is the part of wisdom to "lay in" a supply of white flour against all possible contingencies. It really makes no difference that the wisdom which prompts the move frequently gives way to selfish panic; it only proves that there is strong recognition of the preponderant value of breadstuffs. It was silly, of course, for an aged lady to procure enough white flour packed in barrels to last her at least 20 years as at least one did at the time the United States entered World War I, but it is quite understandable that people today should be giving some thought to future flour supplies, in view of the wide recognition of the part food must play in bringing the present war to a conclusion, as well as in rehabilitating scores of millions of famished people and in some measure influencing their future will to peace.

Many will remember the position of the milling industry when the European war broke out in 1914, but it would be good if much that followed were remembered only as an example of what should

"Complacency may fairly be charged with whatever the milling industry in America lacks in the way of profit-producing improvements during recent years. . . . It is probably true that no mill in the world is today able to produce a tenth as much profit per bbl of flour made as were many relatively small plants operating 50 or 60 years ago. This is not so because production methods were then more efficient than now, however. The reason must be sought elsewhere."

not occur again. Panic stricken, a great many people, among them some governmental officials whose good intentions wandered in a maze of ignorance until all sense of values was lost, forced the United States to greater and greater production of wheat and flour, regardless of either efficiency or necessity. Thousands of old, wornout machines, many of them outmoded and obsolescent, were hurriedly thrown into production, and the apparent potential milling capacity of the country was suddenly augmented far beyond all reason.

One does not need to be a milling expert to understand that possible capacity and efficient capacity are far different things. When the heavy demand for flour ceased (undoubtedly long before the real need for more bread was over), the industry was burdened with a huge surplus capacity, much of which was competitive illegitimately, so to speak. By this is meant that such are the ramifications of the milling business that certain advantages having their source outside of production often permitted inefficient production methods to persist. It is doubtful that such a situation has ever existed in any other major industry, and few will argue that the condition has, on the whole, been healthful at any time.

Certainly a not inconsiderable part of the present nominal capacity in this country is obsolescent. No other industry in the United States has so persistently resisted modernization as milling. Almost everyone has heard or read freely-expressed opinions to the effect that no improvement in milling methods has been made "in 30 years," the implication being that the fault is, and has been, with milling engineers and operative millers, and there would be something amusing about the statement if the consequences of such crooked thinking were not so serious; for the term "30 years" apparently has some special significance that it does not lose with the passing of time.

This was brought out with some force recently by the scanning of an issue of THE NORTHWESTERN MILLER published a half century ago. In a brief article, a milling engineer by the name of Sutcliffe (revealed as a Briton by the wording of the quotation) was quoted as follows:

"There is no manufactory of any kind that I know of in which so little improvement has been made for the last 30 years as that of grinding corn [wheat, presumably]; and the reason is obvious. First, those in general that have been employed in it have not been men of either family, fortune or education. I may venture to assert, with the greatest confidence, that there is not one miller in 20 that knows anything about grinding well. . . . Grinding and dressing well are of much more importance to the master miller and the public than men in general are aware of."

Americans may be somewhat at a loss to identify a "master miller," but it must be supposed that he was not the man who actually did the "grinding and dressing," who was, without doubt, the individual credited with neither family, fortune nor education. Presumably, in the England of the 1890's the actual operation of the flour mill was indisputably a menial occupation—and in honesty it must be said that the same thing was true in no small measure in the United States. It may be well to remember that for a long time practically every man who was neither a large landholder, an officer in the army or the navy, or a politician was something of a menial, and although the American philosophy responsible for the building of a great nation was in direct opposition to this, the Old World influence persisted for a long time in the New World—and persists still in some measure.

It is not political dabbling to point out evidence that there have been tremendous changes in this respect, in the Old World as well as in the New, for the changes are actually of great economic moment. Some realization of this must have partially pervaded the mental picture which Mr. Sutcliffe, the British engineer, saw when he concluded that economical production of flour was "of much more importance to the master miller and the public than men in general are aware of," for it seems evident that up to that time neither the "master millers" nor the milling engineers (who were surely not without education, whatever they may have lacked in family or fortune) had been able to do anything about correcting the deficiencies of flour production.

It may be taken for granted that Mr. Sutcliffe was addressing somebody else than milling engineers when he wound up his little lecture with the following quotation:

"It is truly surprising," he said, "that they [the deficiencies of production already mentioned] should have been so little attended to, considering the high price of grain for so long a time. There is no manufactory in the kingdom that is of half the consequence to the public as that of grinding corn [wheat]; yet is there none that stands so much in need of improvement. What an invaluable

DIAMOND CRYSTAL DELIVERS

Maintaining Its Reputation for Dependability!

YOUR ORDER GETS PROMPT ATTENTION AT DIAMOND CRYSTAL!

● In these hurrying days of all-out production, you'll find it pays to deal with Diamond Crystal—as so many leading salt users do. For today, with increased capacity, we are supplying high-grade salt with customary promptness, in a variety of grades and grain-sizes. Our more than half-century of prompt delivery has won Diamond Crystal thousands of satisfied customers, coast-to-coast. Try us and see—Diamond Crystal delivers!

COURTESY OF THE ASSOCIATION OF AMERICAN RAILROADS

MAY WE HELP YOU?

Perhaps we can effect a major improvement in *your* product . . . or eliminate certain production difficulties . . . by suggesting a simple change in the grain, grade, or amount of salt you use.

Our Technical Service Department, with over 50 years' experience, helps dozens of leading food manufacturers and processors every year. For free counsel, write Director, Technical Service, Diamond Crystal Salt Co., Inc., St. Clair, Michigan.

● Does your household tune in on Kate Smith's program at 12 noon, CBS? It advertises Diamond Crystal Shaker Salt, America's Quality Table Salt in the big red package.

DIAMOND CRYSTAL ALBERGER PROCESS SALT

source of wealth lies yet unexplored in the drying and grinding of grain! The prince, the peer and the peasant are equally interested in it."

In the early 1920's the phrase used by Mr. Sutcliffe (please note that he is not credited with—or accused of—coining it, for it probably originated many years before he was born) was being employed extensively in the United States. But there was this difference: Mr. Sutcliffe saw opportunity for prosperity through improvements in machines and methods, while the "master millers" of America—the owners and directors of the mills—largely assumed an attitude of complacency with respect to production. The position can be roughly summed up in a few words representing the essence of what the chief executive of some large milling concern might have said to operative millers generally in 1922, 30 years after Mr. Sutcliffe's opinion was expressed: "You boys are doing a very good job, considering that there has been no real improvement in milling machines and methods in 30 years. The problems of the industry are sales and distribution, and I only wish we had them licked as you fellows have the problems of production." . . . It should not be surprising that the operative millers of the United States have somehow acquired a general notion that some inconsistency has been wandering around somewhere.

It would be nothing short of silliness for the "grinder and dresser"—the operative miller—or the milling engineer to say that problems of sales and distribution are not important. In no manufacturing industry—and flour milling is that—can they ever be *all-important,* however. Even if milling machines and equipment and schemes so nearly approaching perfection as to make further effort along those lines superfluous *had* been devised (which they have not), there would still be the matter of varying procedure, made necessary by an inevitably varying raw material, to contend with. For the milling of flour differs greatly from the manufacture of cement, for example. Wheat is not an inert substance like clays or sands, and the products of milling cannot be positively evaluated by measuring the properties of the raw material.

Complacency may fairly be charged with whatever the milling industry in America lacks in the way of profit-producing improvements during recent years, but the implication that no progress has been made simply because the modern operative miller is as dumb and incompetent as Mr. Sutcliffe's "grinders and dressers" should not go unchallenged. It is probably true that no mill in the world is today able to produce a tenth as much profit per barrel of flour made as were many relatively small plants operating 50 or 60 years ago. This is not so because production methods were then more efficient than now, however. The reason must be sought elsewhere, and any seeker will probably discover at the same time why the dinky little locomotives of the early days brought in a larger profit per ton mile than can the great modern engines capable of hustling a hundred or more big loaded freight cars along with considerable speed and a good deal of certainty.

Actually, it might be as truthfully said of our great railroads as of our flour mills that no significant improvement in machines or equipment has been made "in 30 years"—or in 60, for that matter. Aside from the diesel locomotives, which as yet comprise but a small per cent of the prime movers used by American railways, there is actually very little that is entirely "new" about either rolling stock or tracks. Wooden cross ties haven't been superseded, and T-shaped metal rails accommodating flanged wheels are still used. Ignoring the diesels for the moment, locomotives still have tenders coupled to them, these carrying the same sort of supplies—water and fuel—common 60 years in the past. The locomotives and cars of the present are much heavier, to be sure, and they run on much heavier rails. For the most part, the cross ties do not just lie on the partially-smoothed ground, with a few shovelfuls of earth thrown over them to keep them from sliding about too much.

Probably there are locomotives still in operation that were built 50 years ago or more. One can be seen occasionally at some transfer point, from whence it pulls or pushes a little car or two to some near-by town a little off the main line. These have horizontal steam boilers with fire tubes and crown sheets—and so have the most modern steam locomotives in existence. In the old and the new, horizontal cylinders on either side, in front, convert the heat of steam to force, which is transmitted to driving wheels through movable pistons, connecting rods and crankpins. These were fine machines in their day, and they are still capable of getting over track surprisingly fast. They are remarkably reliable, too, for reliability is an outstanding characteristic of the double-acting, reciprocating steam engine, but when it comes to efficiency no one would seriously consider comparing them with the locomotives of today. A glance at old illustrations of

VITAMINS for VICTORY

—A pledge by Hoffmann-La Roche, Inc., currently one of the nation's leading producers of synthetic vitamins B_1 and C, in the words of its president, Elmer H. Bobst

"The best fighting equipment will be worth little in this war unless our boys serving under the Stars and Stripes possess the strength and staying power to man it with maximum efficiency. They must possess buoyant, top notch health. Workers in defense industries likewise cannot give their maximum effort unless their health is safeguarded.

"I feel certain that vitamins are one of the important keys to the victory we must win, and to the new and stronger America we have just started to build. For in this terrible contest of armed man against armed man, the one who is most likely to win will be the fittest—and the one who possesses the greatest strength, fortitude, and morale. To achieve the latter, vitamins are just as important as bullets.

"American production is already geared up to turn out synthetic vitamins by the tons. At Roche Park, where our laboratories have been toiling day and night, seven days a week, we are rushing new units which will soon multiply present record production. We are determined that the country's armed forces will not have to get along without vitamins, nor will the men and women straining for higher production in defense industries, nor will our population at large. We are going to see to it that there will be no shortages."

HOFFMANN-LA ROCHE, INC. • NUTLEY • N. J.

milling machinery built 50 or 60 years ago reveals a few striking parallels.

It is interesting to consider that not so very long ago there was much evidence to indicate that the management of the great railroads of this country were of the opinion that production—in their case ton miles and passenger miles—was of relatively small moment. It is true that there was a gradual improvement in prime movers and cars, with a view to mechanical efficiency, but in the light of what has recently occurred even effort along those lines was nothing to boast about. When, in the middle 1920's, it was first proposed that passenger coaches be air conditioned, the proposers got nothing more encouraging than a few horse laughs. At length one road agreed to permit an engineering concern to equip a diner, free of all charge, as a trial. Within a year of the completion of this "experiment" dining cars were being provided with air conditioning equipment as fast as apparatus could be made available. Nearly everybody knows the sequel.

Whether it was this or something else that caused it, somebody must have realized at about that time that the business of successful railroading is something of a field affair—something that cannot be completely controlled by men behind desks or directors' tables. In some manner the entire operating picture managed to get changed. In spite of the certainty in the minds of management at the beginning that new and improved equipment could not be afforded, new, lightweight coaches, insulated, air conditioned and equipped with anti-friction bearings and shock absorbers, began to make their appearance. But something else appeared, too—something that virtually everybody must have noticed: a change in the manner in which things were done.

Almost anybody who travels today can remember when even the best passenger trains stood in stations over long periods of time while somebody did something, ostensibly, at least. When, after a few dozen "All Abo-oards" a trainman finally waved his hand or bounced his lantern up and down, the man in the engine decided he might as well get started, an experienced traveler braced his feet against something, if he could, and prepared for the inevitable jerking that kept up from three to eleven minutes.

There is little doubt that officials had made it plain that a train should be started—and stopped—smoothly. Just why little effort was made to do those things cannot be explained by anybody but a "railroad man," but a miller may form an opinion. Of course better equipment made better starting and stopping possible, and anti-friction bearings and shock absorbers helped, too. But better equipment isn't the complete explanation. For some reason, better judgment, more intelligence and—perhaps as important as anything—better will now play a greater part in the operation of trains than was the case just a few years ago.

Railroad management protested just a little while back that "new-fangled" notions about equipment and operation would certainly lead to receivership, if followed. Apparently this has not proved true. The railroads were confronted by a "diminishing consumption" of their "products." Management sidestepped the issue for a long time before meeting it with improved "production methods." Improved equipment—and improved operation—was readily available when management was willing to adopt it, and the same thing will be found true in the milling industry.

——BREAD IS THE STAFF OF LIFE——

REBUILT BALL BEARINGS

THERE is no good reason why an expensive ball bearing should be junked as soon as it ceases to give satisfactory service. I would like, therefore, to say a few words about rehabilitating worn bearings of this type.

I had the good fortune to be conducted through a factory not long ago—a factory that is devoted exclusively to the rebuilding of ball bearings. The experience was unusually interesting and instructive.

Before rebuilding, they minutely inspect the old bearings. The original balls and retainers are junked. If the rings do not measure up to the S.A.E. tolerance limits they, too, are junked. Then, the remaining rings are given a scleroscopic test for hardness. This test eliminates all rings that are improperly heat treated, fire cracked, burned, or that have been overheated due to improper lubrication.

Next, the outer rings are reground and the size of ball to be used is determined. Then the inner ring is ground to fit. A new brass retainer specially designed is used in each rebuilt bearing. A new retainer is necessary owing to the fact that larger balls are required in rebuilt bearings than in new. Lastly, the bearing is cleaned, inspected, dipped in a special hot petrolatum and wrapped in waxed paper.

One of the arguments put forth for the rebuilt bearing is that carefully inspected rings that have seen actual service are preferable to new rings that have never been in service.—F. W.

★ ★ ★ ★ ★ ★ ★ ★ ★ ★

"It gives me pleasure to advise you that your organization has been chosen to receive the flag of the Bureau of Ordnance and the Navy 'E' pennant in recognition of your outstanding efforts in the production of ordnance materiel vital to our national defense. Recent events have made this award of even deeper significance than any which have been made in the past."

Secretary of the Navy Frank Knox, in a letter to Monsanto.

"E" stands for teamwork!

Among the crews of Uncle Sam's warships and naval planes, the Navy "E" is one of the most coveted and respected honors the men of a single gun turret or an entire battleship can win.

It is a symbol, not of individual brilliance, but of championship teamwork . . . teamwork that only long, gruelling hours of actual practice could perfect.

The same tradition governs the award of a Navy "E" to an industrial plant.

The "outstanding jobs" which win an Ordnance Bureau flag and "E" pennant are not the work of one brilliant "lone wolf" in the research department—or a single, capable executive. They are the result of teamwork that only starts with the quarterback in the front office and includes every man in the organization to the policeman on the plant gate . . . teamwork that only long years in the peacetime service of industry could perfect to the peak of efficiency demanded by a nation at war!

Monsanto is proud to fly the Navy "E" in recognition of past performance . . . glad to accept the responsibility it imposes for future performance. MONSANTO CHEMICAL COMPANY, ST. LOUIS, MISSOURI.

* * *

The Naval Ordnance flag and coveted "E" pennant were awarded specifically to the general staff of Monsanto's Phosphate Division and the division's plants at Anniston, Alabama, and Monsanto, Tenn.

MONSANTO CHEMICALS

SERVING INDUSTRY . . . WHICH SERVES MANKIND

When Specifications Must Be Met

Use a System in Choosing Your Mill-Mix

THE judging of the probable characteristics of the flours which can be produced from a given lot of wheat may be likened to diagnosis of the traits of human character by means of "symptoms." First impressions are often wrong merely because they are formed hastily and without much in the way of evidence. The psychoanalyst tries to use strictly mathematical tests on human beings just as the chemist tries to use them on wheat and flour, and the degree of success attained is just about as high in one field as the other. After all is said, it must be concluded that the greatest accuracy of judgment with respect to wheat or men must come from the greatest volume of evidence, only a little of which can be set down in black and white.

For example, a high percentage of protein is not always a desirable flour characteristic, even when it represents gluten of high quality. Such a situation offers a serious problem to the miller only in connection with blending, for high protein wheats capable of wielding high quality gluten are so rare that they command rather high prices. They are usually worth all they cost to the miller supplying bread flours to commercial baking establishments, for if the flours they will yield when milled alone are too strong it is an easy matter to substitute sufficient quantities of "weaker" wheats—that is, wheats carrying less protein, to get the required strength. On the other hand, if the flours required need only a low or moderate quantity of high quality gluten, the miller would have no incentive to buy high priced high protein wheats. Under such circumstances, the problem sometimes is to avoid wheats in which high protein berries are mixed. The types of flour under consideration would not be benefited by more than a moderate amount of even the highest quality gluten, and it can safely be assumed that the hard, vitreous berries in parcels of soft red wheat, for example, are worth less—to the buyer at least—than are those running true to class.

Millers of soft wheat flour are ordinarily less concerned about the protein content of the mill-mix than are those milling bread flours. Chiefly, their interest is negative. If their wheats are principally of the soft red varieties there is not much danger that the weaker and inferior varieties of the hard reds—those which are actually more yellow than red—will get into the mill-mix unnoticed. Here common sense observation is worth much more than any estimation of protein quantity. It is true that the protein determinations can profitably be used as insurance against too much "strength," and that they will also reveal undesirable weakness, but as has already been suggested, it is certainly not as difficult to distinguish undesirable characteristics in a soft red wheat as in the hard wheats destined to produce flours acceptable to the commercial baker.

The operative is generally required to meet certain specifications in the flour he mills. These include protein percentages. He must not merely meet these: he must also exert the greatest effort to insure against undesirable properties not revealed by the protein estimation. These are not concerned wholly with the gluten quality of the flour: they have to do with properties more or less indefinable but best described in the language of the operative miller under the general heading of "quality." Precautions must be taken to guard against various types of "unsoundness," including mustiness, immaturity and heat damage—even the slight heat damage often ignored in grading, such as is revealed by darkened and brittle germs. Whether facilities for premilling are provided or not, a tentative blend should be made up, employing the best judgment possible with all information at hand as a basis.

Assuming that the protein and moisture contents, as well as the test weights, of the various available wheats are known, a useful table showing these can be devised. In addition to the more or less positive information just enumerated, it is of some value to set down observations made with the aid of the sense of sight,

(Continued on page 25a.)

The light, modern, general office is adequately staffed for prompt handling of your requirements.

The Engineering Department represents the long experience of competent designers and engineers.

A partial view of the special Sheet Metal Department, a fully equipped plant in itself.

Welding to meet the most rigid specifications . . . the work of experi-

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NATIONAL DEFENSE
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Our Stock Includes:

- Bond Gears, Reducers and Casters
- Fibre Motor Pulleys
- Dufour Silk Bolting Cloth
- Tyler Wire Cloth
- Franko Solid Woven Cotton Belt
- Dodge Mfg. Corp. Power Transmission Equipment
- Falk Steelflex Couplings
- Hammond Steel Screw Conveyors
- Superior Elevator Buckets
- Chain Belt Co. Chains and Sprockets
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- Roll Grinding and Corrugating

Recorrugating of rolls adds years of

The Essmueller Co.

1218-24 So. 8th St. 2818 East 12th St.

Lesson in the Alphabet, or

So You Want to Buy a Machine!

BACK in the B.P. days all a fellow needed to buy a piece of equipment was the money—or a reasonable facsimile thereof. But B.P. stands for "Before Priorities": things aren't so easy now.

Not, of course, that you can't call the Super Machine Co. and place an order with reasonable expectation of getting the excellent service for which the Super concern is world famous. You can expect it, almost reasonably, at least. But things are happening. No matter how much your supplier may want to fill your needs, he is now faced with increasing problems of making the supply keep up with the demand.

As a miller, you may say something along this line: "That's too bad. It may mean that now, when the milling industry is faced with the most promising future it has seen in years, and when modernization—the use of better equipment to produce the optimum of operating economy—is more sensible than ever—it may mean," you'll perhaps repeat to yourself, "that I can't buy that new such-and-such I've been wanting. But isn't that the machinery man's problem? After all, what can *I* do about it?"

You, Mr. Miller, can do quite a great deal. Perhaps the simplest way of learning what this service of yours can be is to pose for you a series of questions to a typical manufacturer. "M." will stand for "Miller." "T.M." will indicate that the "Typical Manufacturer" is telling you what he's learned from the mass of forms which must now pass over his desk before equipment can be sold—or even before it can be manufactured. Here goes:

M.—I want to order a machine. I'm sold on it. All right—what must I do?

T.M.—Thanks for the order. We're as happy to get it now as we ever were. But a bit of co-operation is going to make things easier all around. First of all, we'll accept your order with the understanding that application for a priority rating will be filed with the War Production Board, which has taken over the duties of the Office of Production Management. This application should be on form PD-1—an application for a preference rating.

M.—Application PD-1, you say? What's the matter with this P-100 we've heard so much about?

T.M.—Nothing—except that it doesn't go far enough. Form P-100 applies only to repairs and the replacement of parts. Unlike PD-1, it is not sent to Washington for approval. Instead, when ordering replacement and repair materials the purchaser merely signifies that he understands the provisions of form P-100, and that he is therefore classifying his purchase as having a preference rating of A10. He could not, of course, do this if the item purchased represented a capital investment.

M.—I see. What, then, does this PD-1 order cover.

T.M.—The PD-1 application for a preference rating covers the capital investments just mentioned—in other words, the purchase of individual machines—or entire new plants, for that matter.

M.—I see. If, we'll say, I feel it economically necessary to buy a new "whatsis," I must use PD-1. What information must I furnish when returning this form?

T.M.—Briefly, the PD-1 form asks for information about the item desired and proof of its need.

M.—Proof? Just how should that be shown?

T.M.—Proof depends upon circumstances surrounding each particular case. On the PD-1 form, space is provided for explanation of how your use of the desired item will fit into the national defense program. It should be understood that anything which contributes to civilian well-being plays a part in the war program. As an example, it may be that by the use of this new equipment you will be able to maintain or increase certain operations that produce materials essential to the country as a whole. (Flour is such a product.) The new machine may create or at least maintain employment. It may save power. Perhaps the amount of wheat required to make a barrel of flour will be reduced. All such things as this should be explained in detail. Also, the end use of your products should be mentioned specifically. If you have army or navy contracts, these will doubtless have their effect upon the decision of the Priorities Division.

M.—The idea, as I see it, is to make it as easy as possible for you fellows to fill our orders by obtaining as high a preference rating as we can. Your hands are tied—you must fill high ratings first. Right?

T.M.—Yes, that's correct.

M.—After I've filled in this order

FAST ACTING

METHYL BROMIDE

MAKES FUMIGATION EASY

No need for costly pumps, pipes and equipment

METHYL BROMIDE is a powerful fumigant developed by The Dow Chemical Company. It is fast-acting, inexpensive and thoroughly effective. It has proven itself in many types of difficult fumigations.

High rate of diffusion gives METHYL BROMIDE great penetrating power. *This means it will reach into the very center of every bag—every container.* The kill is quick and complete in *all* stages, from egg to adult. It also means you can forget about expensive equipment, for METHYL BROMIDE can be applied quickly, from the outside. Simple applicator on vault wall permits METHYL BROMIDE to enter vault from cylinder. No need for vaporizers, pressure pumps and costly pipes installed throughout the chamber.

METHYL BROMIDE'S fast diffusion rate permits quick, easy venting. Your stocks are speedily returned to meet prompt shipments.

So investigate DOW METHYL BROMIDE today. See for yourself what new advantages it will give you.

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New York City · St. Louis · Chicago
San Francisco · Los Angeles · Seattle · Houston

DOW

PD-1 what do I do with it—send it to you?

T.M.—No. Your completed forms will go direct to the priorities division of the War Production Board.

M.—Then what happens?

T.M.—The WPB officials will study your statements carefully. Upon approval of your request, they will assign a preference rating (such as A10) and a serial number. A certificate using this number will then be sent to the manufacturer named on your application.

M.—How does the manufacturer make use of this certificate?

T.M.—If the manufacturer is operating under a materials allotment plan he will merely retain the certificate as evidence of his qualification for an extension of the priority rating under which he is doing business. If he is not obtaining his raw materials under allotment, he may use your numbered certificate to buy the needed materials to produce whatever your order may be. If he uses your certificate in this way, he must order these materials *before* shipping your purchase to you.

M.—What is this allotment plan?

T.M.—A plan whereby the manufacturer is allotted materials for a given quarter under what is known as "priority assistance." This plan can also be used to some extent by the miller. The form used is PD25A—but perhaps we'd better get to that later.

M.—Yes, let's do. I feel lost in the alphabet as it is. By the way—if I order a machine by this PD-1 procedure, how long will it take the deal to go through?

T.M.—That question can't be answered accurately. However, it takes from three weeks to a month for the priorities division to go over your application and assign a serial number to your rating. In most cases, manufacturers need longer than that to make shipments because the rate at which they can obtain materials, the amount of skilled help available and generally increased business tend to slow deliveries. And here's an important point, worth reiterating. A preference rating of A10 has generally been granted millers under order form PD-1. A10 is the *lowest* rating of 20 in the "A" class (which has some definite relationship to defense needs). Therefore, the manufacturer must fill all higher ratings first.

M.—What am I going to do if I need some new things in a hurry. Is there any chance of bettering this rating?

T.M.—Yes, there is. That's where the order form known as PD25A, which we mentioned a moment ago, comes in. This priority assistance plan covers materials and supplies purchased regularly. In the case of a mill, this would be such things as belting, sheet steel, bags, and so on. The main thing about this order form is that it asks for a specific breakdown of end uses of your products. Such purchasers as the army and navy, the lend-lease agency and other government agencies are highly rated. And, of course, animal feeds are in high demand today. If sizable proportions of your output go to any of these uses, the chances are that the priorities division will consider placing your order under a higher rating than the A10. You see, the preference rating given under application PD25A covers a quarterly period under order P90. The PD-1 preference rating, however, applies to only one purchase. Therefore, the former indicates definite recognition of the importance of your needs.

M.—Guess I'm beginning to see light. But here's a question that some of my contemporaries might like to see answered. How about millers in Canada? May they purchase machinery from the States under any of these plans?

T.M.—That's a good question. It is up to the manufacturer to place the PD-1 application with the Washington office of the Canadian Munitions and Supplies Board. From there it will go to Ottawa. If approved in Canada, it will then be returned to Washington and submitted to the WPB in the regular manner.

M.—Say, I almost forgot something. Where can I obtain these various forms?

T.M.—From the various offices of the WPB—which, as was mentioned earlier, has replaced the OPM. Direct your request to the Priorities Division.

M.—Well, that's about that. Only thing I'd like to know now is whether there's a chance to change one of these PD applications to PDQ?

T.M.—You can try, anyway.

"Six bushels of wheat or 360 lbs per year means 1 lb per day. The flour from this pound of wheat would yield about 1,200 calories. If the average calorie consumption per day is estimated at 2,400, then 6 bus would constitute half the energy value of the ration. When the per capita annual consumption is 4 bus, as in the United States, the energy value of the wheat would be 800 calories per day or one third of the ration."—C. O. Swanson, in "Wheat and Flour Quality."

DO THEY RE-ORDER YOUR PRODUCT WITH A SMILE?

IT'S a mighty good sign when grocers re-order your product from their wholesalers with a smile. It's likely to mean good sized orders—the kind that are profitable for you and everyone else along the line. There's no better evidence that your product is clicking with the public!

Surest way to keep profitable repeat orders coming in consistently is to insist on uniform top quality for every ingredient that goes into your packaged flour or sweet goods. That's the common-sense, basic safeguard for the time, money and effort you devote to your processing, packaging and selling.

As for Bicarbonate of Soda, there's one sure, time tested way to make sure of unvarying excellence. Standardize on Columbia Flour Blend Bicarbonate of Soda and Columbia U.S.P. Bicarbonate of Soda. You'll find, as so many other users of these Columbia products have learned from experience—that it pays!

COLUMBIA FLOUR BLEND BICARBONATE OF SODA

A blend of U.S.P. Bicarbonate of Soda and Tri-Calcium Phosphate prepared specifically for your use. We know it must be pure—and we keep it pure. We know it must be free-flowing—and it is. It is supplied in a variety of sieve specifications to meet your needs—and our Technical Service Department is always ready to help you use it to best advantage.

COLUMBIA U.S.P. BICARBONATE OF SODA

In both powdered and granular form—and noted for its high standard of purity, uniformity and whiteness.

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PITTSBURGH PLATE GLASS COMPANY

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Products of Milling Operations

PART TWO

FOR some reason never explained to us books published perhaps half a century ago often bore two titles —one dignified and the other slightly more graphic. Something along the line of "Jimmie Jones's Romance, or Waiting at the Gate for Katie." It might not have been a bad idea to double-title this series as well, following the original head with something along the line of "or a Camera's Eye View of Milling Reductions." For pictures are the heart of the articles to be presented here. Information pertaining to ash, percentage of extraction and so on is secondary to the camera's impression of the stocks.

Of course, any reasonably experienced miller can come rather close to identifying the probable origin and destination of a stock given him for inspection. He bases his assumption upon such things as particle size—or, rather, "feel"—and the "cleanness" of the stock. But his eye cannot segregate and enlarge a few of the thousands of particles which make up a sample. The lens of a camera can.

The pictures on the opposite page are exactly six times as large as the samples from which they were made. Before photographing, the difference in particle size of the products (which are stocks taken from the first break system of the mill flow published last month) did not seem great. Now it is easily seen. And the tiny slivers and specks of bran which, to the unaided eye, were hardly distinguishable from the sizings on down the line, are in the photographs much more readily identified. Their presence being thus verified makes it easier to understand how, in a stock that appears to be virtually all clean middlings, there can be as much as 8 parts of offal to 92 parts of pure endosperm.

Ash figures used as a guide to the amount of offal present in any given stock are not as forceful as are actual percentage comparisons of the amounts of offal and flour in a given stock. Look at pictures four and five—the first break sizings and the first break coarse middlings, respectively. Their ash difference —.854 compared to .580—does not seem great. Still, the sizings contain 12.74 lbs of offal to each 87.25 lbs endosperm: the coarse middlings have only 8.35 lbs of offal to 91.65 lbs of pure endosperm.

Ash, protein, moisture and total bran contents will be given in a moment. Now, however, let's take a look at the photographs. The cleaned wheat appears to be well scoured, but it is certainly far from being the best mill-mix a miller might have. Some of the berries are almost twice as large as others. In all probability a better job could be done if the berries were separated as to size and broken in a manner best suited to that size. As it is, the break chop plainly shows that some of the smaller berries are barely broken—almost untouched. If they had been opened as they should have been, the larger berries would have been crushed too much—the bran would have been clipped off. And although the reduction through the 18W would have been greater, the reduction products would certainly not have been as clean.

But the mill-mix is not perfect. It is, therefore, more typical. Millers are paid to get the most they can from the raw material furnished them.

These stocks originated in a southwestern mill. Probably because of the widely varying sizes of berries, the reduction through the 18 seems exceedingly low. It is given as 12.5%. The picture of the chop would indicate that while the smaller and thinner berries have been virtually unbroken, a great deal of flour was knocked out of the plump components of the mix. This must be the case, for the flour produced by the first break rolls is 2.25% through the 12XX—an amount not generally much higher even when the extraction through the scalping wire is considerably greater.

The third picture, which shows the scalp of the 18, reveals that a number of large, clean middlings were produced. The analyses give an ash of 1.8 and a protein of 13.15 for the scalp. (The original wheat had an ash of 1.65 and a protein of 12.75. The moistures of all the stocks in the first break system were very close to 15.4%.) The parts of offal per 100 units of pure endosperm and offal are 26.76.

Stock 4 (sizings) has .854 ash and 10.95 protein. There are 12.74 parts of offal. The coarse middlings, No. 5, gave .580 ash and 10.65 protein, with 8.65 offal parts. The first break flour, No. 6, which goes to first or second clear, was found to contain .560 ash and 12.25 protein. There are 8.35 parts of offal per 100 units. The medium midds. are lower in ash: the figure is 5.20. Protein was found to be 11.30 and the parts of offal are 7.75. The dustings through the 9XX are virtually the same as far as analysis is concerned. The ash figures are identical and the protein is 11.40.

Some of the particles through the 9XX might have gone through the 12XX if their travel over this sieve had been extended. However, their ash is lower than that of the first break flour. They are handled gently to avoid attrition and "contamination" by less pure stocks, and are sent to the dusting sifter where, in company with other stocks of similar nature, they may be handled and classified to find their way eventually into flour streams worth more than that coming from the first break.—RICHARD E. MILLER.

(To be continued.)

DIABLEND

Top Quality

Malted Wheat Flour

It is essential that your hard wheat flours bake consistently to your established standards. But improper diastatic treatment can spoil your most careful wheat selection and milling methods.

DIABLEND malted wheat flour assures you of uniform quality and quantity of diastatic action. Selected wheat is malted in our own malt plant under automatically controlled atmospheric conditions. DIABLEND is manufactured to a standard level of maltose, milled so it is free flowing for accurate feeding.

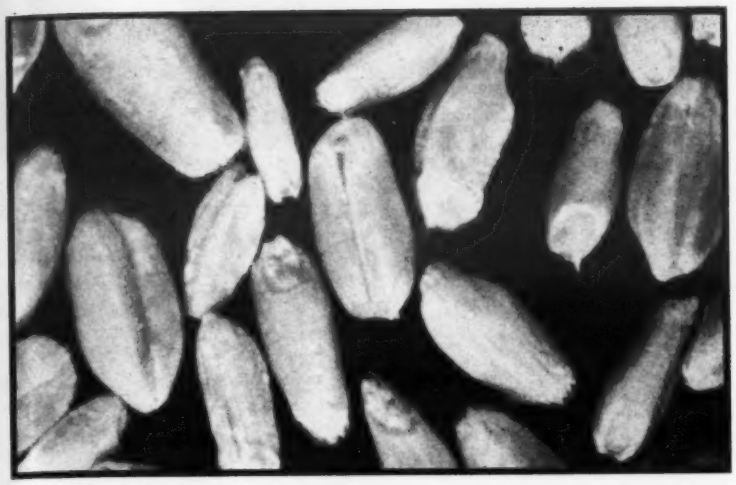
We will provide samples for experimental work in your own laboratory, or you may send to us samples of your untreated flours for analysis. Maltose or gassing power analyses in our laboratory are free to DIABLEND users. Ask for a sample and quotation of DIABLEND today.

B. A. ECKHART MILLING CO.

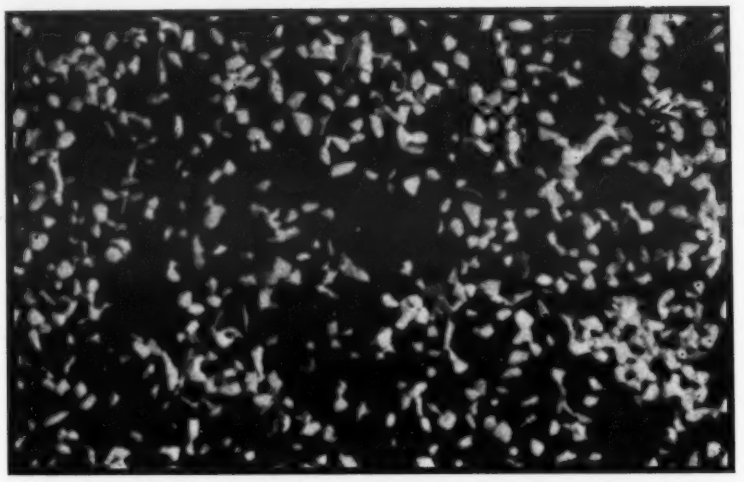
1300 W. CARROLL
CHICAGO, ILLINOIS

—BREAD IS THE STAFF OF LIFE—

"It is most important that the air pressure in any one section [of a purifier] should be uniformly distributed over the sieve; otherwise impure stock will be dressed through at the points where the air pressure is low and good stock will be lifted out at points where it is high." —E. D. Simon in "The Physical Science of Flour Milling."

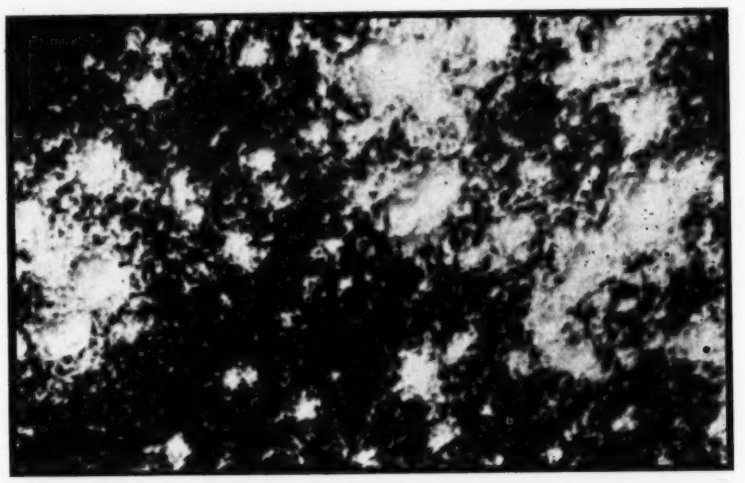


NO. 1. WHEAT TO FIRST BREAK ROLLS



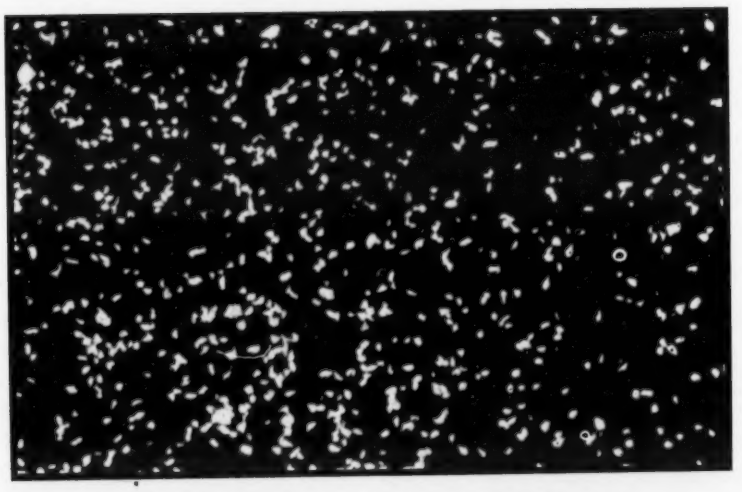
NO. 5. FIRST BREAK COARSE MIDDLINGS TO PURIFIER 2

NO. 2. FIRST BREAK CHOP

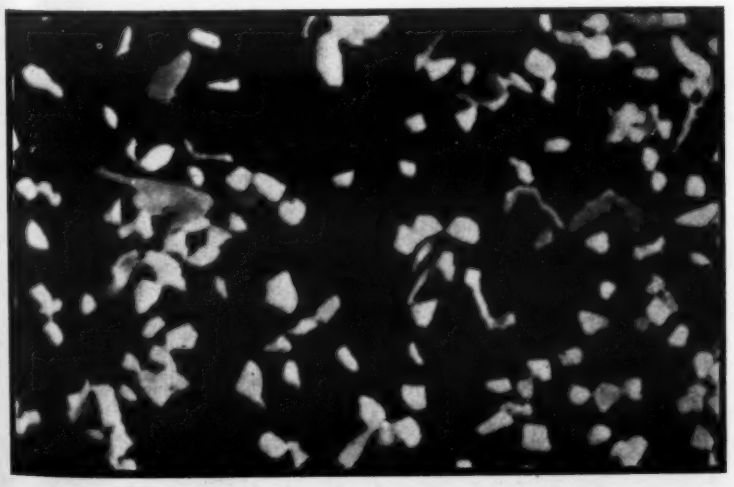


NO. 6. FIRST BREAK FLOUR

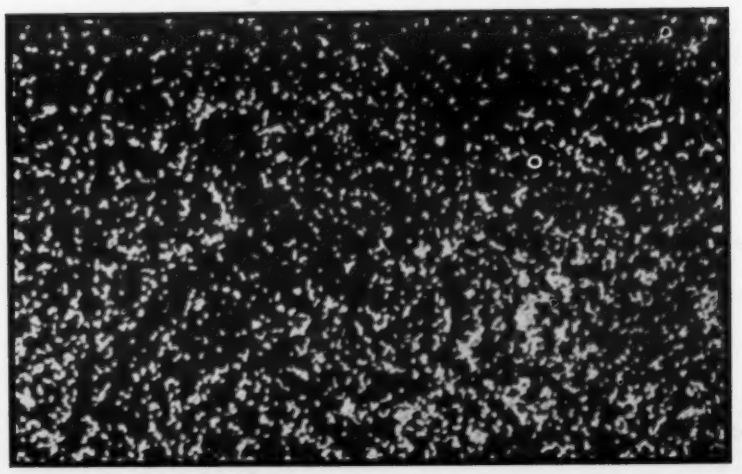
NO. 3. FIRST BREAK SCALP TO SECOND BREAK ROLLS



NO. 7. FIRST BREAK MEDIUM MIDDLINGS TO PURIFIER 5



NO. 4. FIRST BREAK SIZINGS (HEAVY MIDDLINGS)



NO. 8. "DUNST" FROM FIRST BREAK TO DUSTING SECTION

PNEUMATIC CONVEYING

★ ★ ★ ★ ★

Do YOU Know

that many small streams of mill stocks and products can be conveyed more economically by air than mechanically? Pneumatic conveyors can be applied to many mill jobs with savings in power and upkeep. An outstanding advantage of pneumatic conveying in flour and cereal mills is the elimination of the insect breeding pockets existing so commonly in elevator boots and mechanical conveyors. And . . . pneumatic conveyors can often be installed where space is not available for mechanical conveyors!

USE PNEUMATIC CONVEYING to save POWER, minimize INSECT BREEDING and reduce UPKEEP!

The Dual-Clone Dust Collector

ONE FORM OF SUCCESSFUL PNEUMATIC CONVEYING INSTALLATION INVOLVES THE USE OF THE "DUAL-CLONE" DUST COLLECTOR AND A SPECIAL TWO-STAGE FAN AS THE PRINCIPAL EQUIPMENT.

Dust DAY Control

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The Day Company of Canada, Ltd.

EXHAUST FANS . . TEMPERING TANKS . . MILL SUCTION SYSTEMS . . PNEUMATIC CONVEYING SYSTEMS . . BAG CLEANERS . . FLOUR STORAGE AND BLENDING BINS . . SHEET METAL FABRICATING . . DUST COLLECTORS . . .

How's Your Appetite Today?

Recipe for Self-Rising Flour Sales

SOME men are bringing home large pay checks these days. But by far the majority of the wage earners in the nation are cashing just about the same size checks now that they were a year or two years ago. There is, however, a difference. Their money simply won't go as far.

Probably the housewife has been the first to feel the pinch. She pays the grocery bill. In different areas food prices have advanced by varying per cents, some high and some moderate. But the advance is nation-wide. And all over the country Mrs. Housewife is beginning to seek ways and means to make that grocery budget stretch over the week.

The flour milling industry can save her a lot of worry. It can, if it will, remind her that the products baked from flour are the most nutritious of food. And the least expensive.

During the first world war there were "Wheatless Mondays" and wheat flour substitutes. Wouldn't it be better all around to have, say, a "Wheatcake" Monday?

Some ladies of the home have got out of the habit of baking good hot rolls or biscuits, or of making pancakes. Others never had the habit. If they acquire it, they'll find that the budget is much more likely to reach from one end of a week to another.

Millers who produce self-rising flour can do a great deal to encourage home baking. The hardest part of that job is to understand the psychology of the average housewife. (Our own is likely to snort at this, but we'll take a chance.) In the first place, most women seem to think it's impossible to cook anything except water without a recipe. That's not really unreasonable, we suppose, but this in many ways sensible sex is exceptionally changeable. For example:

The hungry man comes home to find, let's assume, a lovely devil's food cake. He is soon full both of cake and of praise. Well and good. He rather imagines that his wife is now started on a spree of home baking with the idea of keeping the budget respectable and the meals interesting. But time marches on: no more devil's food cake.

What, the husband finally asks rather timidly, is the matter with the cake business? His spouse sighs. She hasn't, she states, any recipe.

Now that is rather difficult for him to comprehend. Unless his memory has failed, she has a very excellent recipe that proved quite acceptable. He ventures a remark to this effect. And what happens? The good lady bestows in his direction a look of polite scorn. He, poor man, simply doesn't understand these things. A recipe grows old. *She* wants something new!

Millers have an excellent opportunity to deal with this rather odd psychology. It's up to them to supply recipes in ample variety. We'll guarantee that the ladies will try them all at least once. (Since their memories are not infallible, they might even slip and try one twice.) Which would be a help.

We don't know how many millers make a practice of publishing recipe booklets to be packed in their flour, or to be placed on the grocer's counter for anyone to see. But we're sure that any miller could profitably give the matter some thought. The expense is little. And he'll be wise if, rather than depend upon the food page of the daily paper to give her cooking hints, he himself gives the ladies directions to read. Food page editors, unfortunately, have an allergy, it seems, about advocating the use of any great amounts of white flour. Perhaps the stuff seems too tame.

But flour isn't tame. There is probably no other product in the world that is so adaptable. From pancakes and syrup for breakfast to ice box rolls just hot enough to melt butter at the dinner table, there are hundreds of different ways to use flour.

So why not try an experiment? Get your wife to think up some recipes—and ask all the men in your mill to do the same. Try them out. If they're good, see what can be done about keeping the purchaser of your flour supplied with new, appetite-provoking uses for flour.

And, because lunch time is approaching, we'll start things off. (It's always easy to think up a recipe when you're hungry.) How would this be? Broil such and such a number of strips of bacon until near-crisp. Cut into small pieces. Mix into the frothy, tasty batter made from "None Better" pancake flour. Bake on griddle without grease. And keep on baking until family calls quits. Which'll be a long time.

Well, that's a start, anyway. We're going to see how pancakes would taste for dinner tonight. Lots cheaper than T-bone steaks.

P. S. Our favorite pancake baker says this recipe should be tried and proven several times before publication. That's the trouble with women—no imagination. And perhaps that's why they must depend upon men to think up new ways of cooking things.—R. E. M.

——BREAD IS THE STAFF OF LIFE——

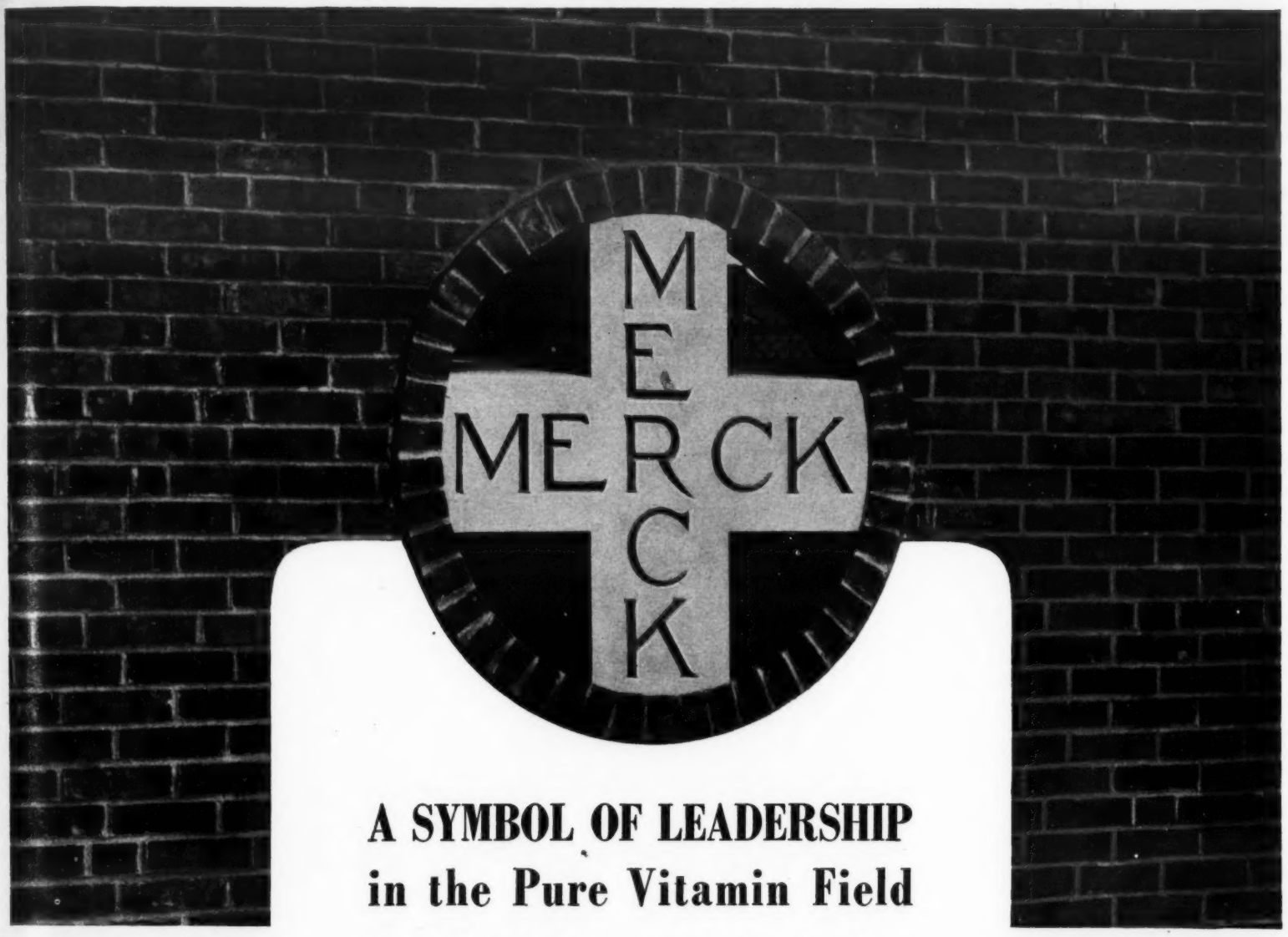
HOW TO USE A WRENCH

MANY times I have heard about how to make a wrench longer by slipping a gas pipe over it. It is a very simple procedure and it may sound sensible: but it actually isn't sensible to lengthen a wrench handle in order to put nuts on tighter.

As you doubtless have observed, wrenches for small nuts are invariably short; for medium nuts, medium in length, and for large nuts, long. The manufacturers would seem to have some "system" in making wrench lengths: they have. The pitch of the thread is considered, the cross-sectional area of the bolt at the bottom of the threads is considered, and the strength of the man who does the tightening is also considered.

To make a wrench twice as long you therefore increase the tension on the bolts to twice the amount, the force of pull on the wrench being the same. By increasing wrench lengths, I have frequently actually "stretched" bolts until they broke in two (or I've stopped turning as soon as I felt the bolt begin to stretch). This is poor practice, and I do not do it any more. The elastic limit of a bolt should never be reached.

If you feel like making a wrench longer for "unscrewing" a nut—all right. But don't make it longer for tightening.



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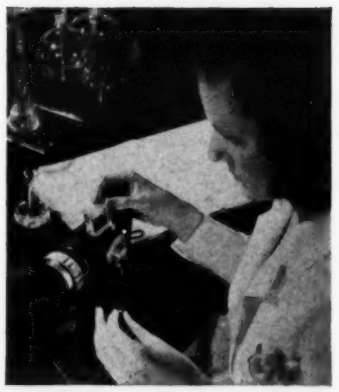
Isolation of a Vitamin



Chemical Assay of Vitamin B_1

Analytical Test in Vitamin Procedure

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(Vitamin C)

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(2-Methyl-3-Phytyl-1, 4-Naphthoquinone)

2-METHYL-NAPHTHOQUINONE
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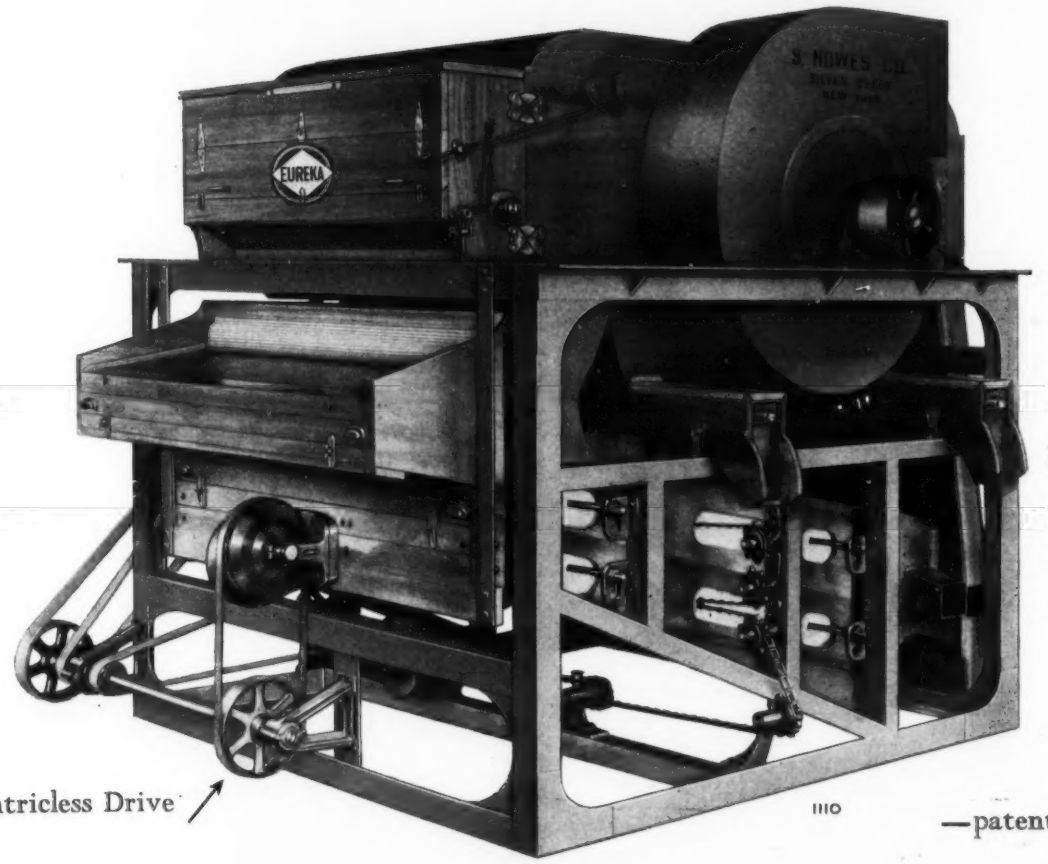

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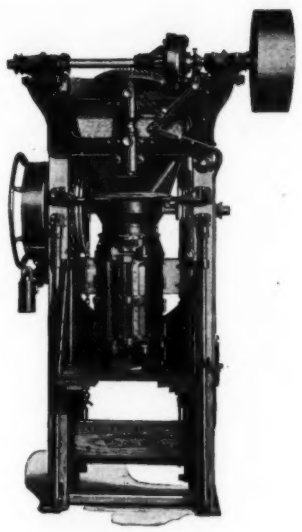

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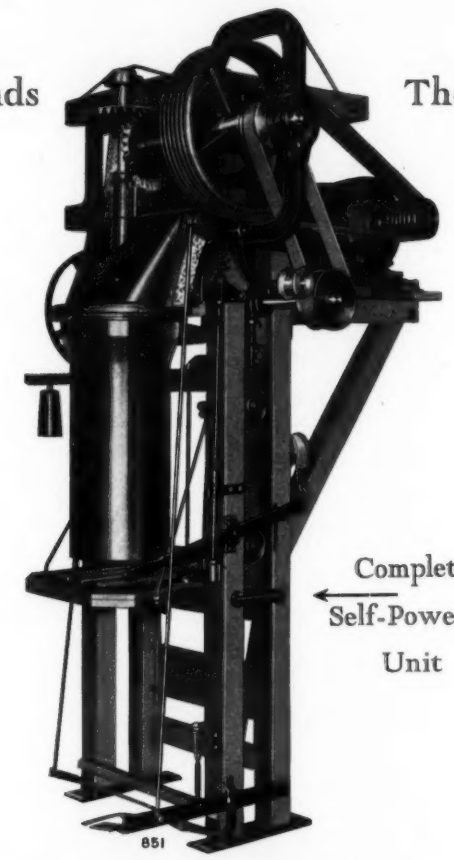

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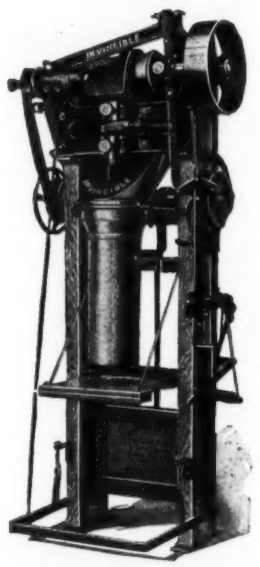

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Cooling a Diesel Engine

By Orville Adams

THE chief purpose of the cooling system of a diesel engine is to protect the engine. The principle of removing heat from the engine by circulating water through jacketed cylinders is, however, contrary to theoretical thermodynamics, and the greater the cooling, the less thermal efficiency. Dr. Rudolph Diesel, recognizing the immense quantities of heat lost by cooling, undertook to design an uncooled engine. Theoretically, he was correct, but the uncooled engine did not prove practical.

The impossibility of subjecting any known metals to combustion heat without damage long ago prevented any further attempt in this direction, and Diesel himself quickly reverted to the use of cooled cylinders. No metals will withstand or resist the destructive action of flames when not protected by cooling water, just as no metals are available which will operate at reasonable loads and speeds without the use of a lubricant to reduce the friction and cool the wearing surfaces. The cooling system protects the metal and prevents the destruction of lubricating oil.

It can be said that effective and proper cooling will meet the following requirements: It will protect the film of lubricating oil between the piston and cylinder. It will equalize the temperatures of the various parts subject to heating, and thus prevent excessive heat stresses which cause cracking and warping of the main parts. And finally, it will prevent *overcooling* of the combustion chamber areas, with the resultant retarded combustion, reduced fuel economy and increased wear of the piston and cylinder working surfaces.

The most important fundamental cooling requirement is that of preventing the destruction of the film of lubricating oil by excessively high temperatures which oxidize oil and leave a black tarry residue. Cooling must be sufficient to prevent breakage of the oil film between the piston walls and the rings. It is said that the temperature at which this will occur ranges between 400° and 500° F.—not many oils resisting more than 450° F. The temperature to which the walls are exposed ranges much higher for short intervals, but the temperature of the metal, measured at the bottom of the piston ring groove or in the lands, is less than the ring temperature, and hence less than that of the oil in contact with the piston rings. When the temperature of the lubricated surfaces is kept below the critical temperature at which the oil may be damaged, the film will be protected. The tendency of piston rings to stick, and wear on the piston and liner, will all be reduced.

When the metal carrying the oil film is below certain ranges of temperature, heat is dissipated and the film preserved. When the temperatures of these surfaces are above this range oil is said to "crack." A chemical reaction takes place, causing damage to the lubricant, with consequent troubles in operation.

Good cooling should also maintain relatively uniform temperatures throughout the entire working cylinder and piston. Uneven temperatures cause unequal expansion of the metal parts, and result, at times, in cracked cylinder heads and pistons, uneven wear on the liner, leaking gaskets and many other troubles.

Lest it be overlooked, it should be noted that over-cooling is likewise detrimental. The damage, however, is usually less than in the case of insufficient cooling. When the metal surfaces surrounding the combustion chamber are too cool, the combustion process is retarded or arrested at low loads, and misfiring may result. Much unburnt fuel may be deposited on the cylinder walls and piston top. Obviously, there will be excessive fuel consumption. Rapid wear on the piston and liner will ensue, due to fuel mixing with and diluting the lubricating oil.

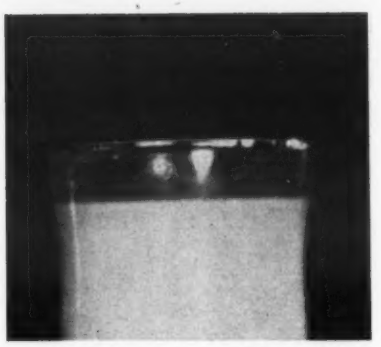
Proper cooling involves the following considerations: (1) the quantity of cooling water circulated; (2) the outlet temperature of the cooling water; (3) the inlet temperature, or the temperature difference, and (4) cleanliness and purity of the water used.

Let us consider the importance of these points. A good quantity of water should be circulated through engine jackets and cylinder heads. Large quantities of water are needed to lower the temperature difference between inlet and outlet and hence prevent great temperature differences at various points in the jacket and head. The turbulence caused by forcing large quantities of water at high velocities through the jackets prevents stagnation of water at certain points. Water tends to stagnate, and its movement slows up adjacent to the exhaust parts, around the exhaust valves, and in many other intricate passages in and about the cylinder head casting. This stagnation results in localized hot spots, causing the water to boil and hence deposit scale, which when formed further aggravates the situation. Circulating from ⅓ to ½ of a gal of water per minute per horsepower definitely insures uniform temperatures and adequate turbulence. This means that 167 to 250 gals per minute should be circulated through a 500 h-p engine. Most of the recent installations are designed to circulate these quantities of water, while many of the older engines, which date back to a history of cracked heads, were not arranged to circulate more than half this much.

In most of these cases, cracked heads and such troubles were caused by this lack of sufficient quantities of water circulated through engine jackets. Let us remember that the temperature of the outlet water is only an indication of the average temperature of the water after passing through the cylinder. Even though the outlet temperature may be 130° F., it is more than likely that some of the water never exceeded 100° F. until just before leaving the jacket, at which point it was mixed with water of from 130° to 170°. The equalized temperature passing the thermometer was therefore 130° F. The use of sufficient quantity improves the circulation and lowers the temperature variation at the various stratums of water.

While small engine cylinders require relatively thin metal for cylinder walls and heads, large cylinders require much thicker walls to withstand the greater total pressures tending to burst them.

(Continued on page 21a.)



Second in the Series
"Some Physical and Chemical Properties of Starch"

THE MEANING OF . . .

SOLUBILITY

By C. O. Swanson
Kansas State College

A FEW words about the meaning of solubility, as here used, may be desirable. When sugar or common salt is put in water both seem to disappear, for the appearance of the water has not changed. The presence of the substances may be known by the taste, however. If the water is evaporated, the sugar or the salt will all be recovered unchanged. When a small amount of starch is mixed with water, however, a milky appearing suspension is obtained.

When sugar or salt dissolve it means that they are divided into molecules—units too small to reflect light. They cannot reflect the light because the shortest wave lengths of light are many times that of the salt or sugar molecules in the solution. The starch molecules—or, rather, unit combinations of starch molecules—are large enough to reflect or influence light waves. This is the cause of the milky appearance, and we say it is either a suspension or a colloidal solution.

Untreated starch mixed with water gives a suspension because the intact granules reflect the light in a manner somewhat similar to snow. By crushing, as will be shown presently, the alpha and the beta-amylose may be separated. When granules thus treated are placed in water the beta-amylose portion of the granule divides into such small portions as to give a clear solution, while the alpha-amylose portion does not so divide.

With regard to the arrangement of the amyloses in starches, some writers hold that the starch granules are built up of alternate layers of the alpha and beta-amyloses. Others indicate that these two are intimately mixed in the starch granule. The alpha-amylose is more dehydrated than the beta-amylose. This means that it has lost more of its original water, and this is supposed to give the characteristic of insolubility. Now the sugar molecule, $C_6H_2O_6$, contains one more H_2O unit than the starch molecule, $C_6H_{10}O_5$. Some writers state that the insolubility of starch is due to the fact that the outer portion of the starch granule is covered with a layer of hemi-cellulose. This is probably only a more dehydrated alpha-amylose.

In crushed starch granules the beta-amylose is soluble in both hot and cold water, while the alpha-amylose is not soluble even in hot water. The insolubility of the intact starch granule is due to the greater concentration of the alpha-amylose in the outer portion, thus forming a covering of insoluble material. When starch is ground with sand in a pebble mill, the greater part of the granules will become soluble in cold water. Alsberg and Griffing (1925) found that it took many hours of grinding with flints in a ball mill to injure all the starch granules in wheat flour. When thus treated, 60% of the starch became soluble in cold water. Other investigators have found that as much as 75% of the wheat starch belongs to the beta-amylose. Potato starch has the largest percentage of substance which may become soluble, even up to 98%. Corn and rice starch have as much as 86% and 83%, respectively.

The division between the alpha and the beta-amyloses is not absolute. From what has been said it may be inferred that each may merge into the other. The division is made mostly on the basis of solubility or dispersibility in water. Solubility depends on the strength of the forces which hold the $C_6H_{10}O_5$ units together in the starch molecule, but very little is known about these forces. In the alpha-amylose, the $C_6H_{10}O_5$ units are held together so strongly that they are not separated by water. In the beta-amylose, the units are loosely held together, and so they may be separated by water into small units that do not reflect light. Hence we say they are soluble.

* *

The diameters of the starch granules in 17 widely differing samples of flour were measured by Grewe and Bailey (1927). In such small measurements the unit used is the micron, which is one thousandth of a millimeter, or 1/25,000 of one inch. Particles which are in these micron sizes cannot be detected with the unaided eye, but they can easily be seen with the ordinary microscope. The limit of visibility with this instrument is something less than one micron. Hence all sizes of starch granules may be seen.

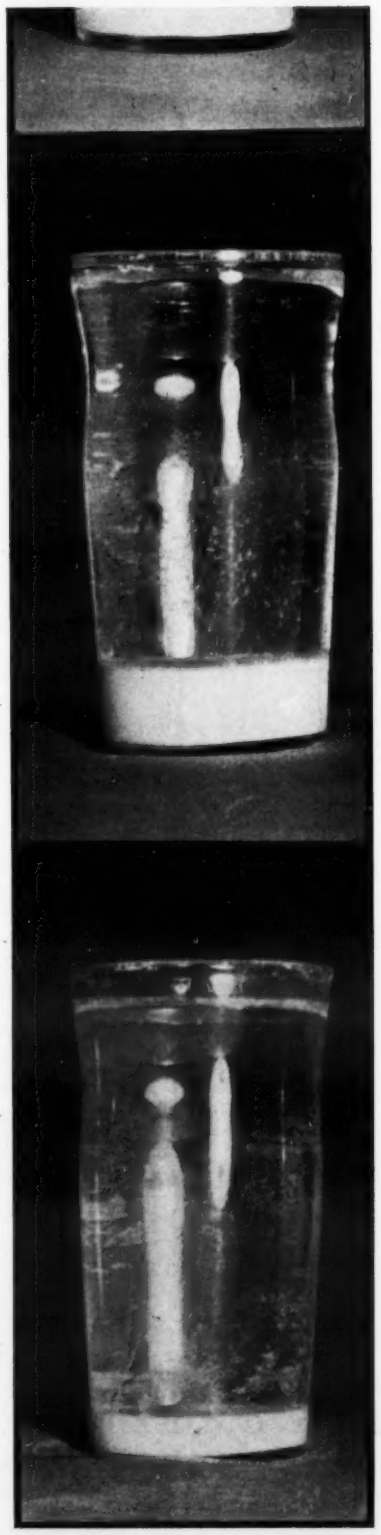
Grewe and Bailey found it convenient to group the wheat starch granules in three classes on the basis of size. In the first class they placed the granules which had a diameter of less than 7.4 microns. In the second class they placed the granules which had diameters between 7.4 and 14.8 microns. In the third class were placed those which had diameters of more than 14.8 microns. The average of all measurements of the starches from these 17 flours placed 81.56% of the granules in the smallest granules, 5.86% in the medium and 12.52% in the class of largest granules.

It is interesting to compare the size of starch granules with those of flour granules. Buchanan and Naudin (1923) found that about 80% of the starch granules varied from less than one up to eight microns in diameter, and that nearly 10% were over 20 microns in diameter. It would take over 1,000 of these larger granules placed in a row to make a line one inch long. The average diameter of flour particles is nearly 0.004 of an inch or 0.1 millimeter, which is equivalent to 100 microns. Thus five large granules placed in a row would measure the length of the diameter of an average flour particle, and a cube 0.1 mm³ of such large granules would contain 125.

If an average diameter of 10 microns is assumed, then the flour particle would contain about 1,000 granules of starch. The protein material is intermixed with these granules, but it is beyond microscopic visibility. Buchanan and Naudin

THE GLASSES

The solubility of starch is illustrated in the three glasses at the right. The top glass pictures starch in suspension. Directly below this, the starch, which was insoluble, has settled to the bottom, leaving clear water above it. When starch is made soluble it goes into "solution," rather than suspension. This is suggested in the final picture, which shows what would happen if the same amount of starch shown in the second picture were made partly soluble. Some would go into solution; that which was still insoluble would settle.



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also found that the sizes of the starch granules vary in different kinds of wheat. The strongest wheats had, on the whole, the smaller granules.

Most attention has been given to the protein in relation to strength of flour, but it is possible that variations in starch characteristics may also be a factor. This will be discussed later.

With regard to the relation of surface area to weight, the fact that the smallest starch granules in wheat flour are the most numerous does not mean they have the greatest amount of surface, nor do they weigh most. The relative surfaces and weights in the 17 flours used by Grewe and Bailey were calculated by Stamberg (1937). For the purpose of calculation, an average diameter of 4.7 microns was assumed for the small granules, 10.1 microns for the medium size, and 24.9 microns for the large size. It was also assumed that the granules were of spherical shape. The average surface area for the granules in the 17 different flours was found to be 2,004 square centimeters per gram of starch, varying from 1,780 to 2,337 square centimeters. Thus the total surface area of the starch granules in these 17 flours varied considerably.

The largest granules had the greatest total surface area, 74.4%, although they constituted only 12.52% of the total number. The medium granules, which were 5.86% of the total number, had 5.9% of the total surface, and the smallest had 17.7% of the total surface area although they constituted 81.56% of the total number. The largest granules had 93% of the total weight, the medium size 2.9%, and the smallest, 4.1% of the total weight. Thus both in total surface area and weight the larger granules are by far the most important.

Subdividing a body without loss of material increases the surface area. A one-inch cube has six faces each one with an area of one square inch, or a total surface of six square inches. If this cube is cut into halves the surface is increased by two square inches. If cut into four equal cubes, the surface is increased by four square inches. Thus the same amount of material has a surface area of 10 square inches instead of four. If the one-inch cube was divided into 1,000 equal cubes, their total surface would be 60 square inches.

The same weight of small starch granules will have a much larger surface area than if made up of large granules. Stamberg calculated that if all the starch granules in flour had the same diameter as the small ones the total surface area per gram of starch would be 8,519 square centimeters. If all had the same diameter as the large ones, then the total surface area per gram would be 1,606 square centimeters, or only one fifth the surface area which the small granules would have.

Since the starch granules from different plants vary in diameter, it follows that the surface area would be the greatest in those which have the smallest granule diameters. The calculated surface area of the granules per gram of starch from the potato was 853 square centimeters, of starch granules from corn, 3,077 square centimeters, and of starch granules from rice, 8,000 square centimeters. The granules of rice starch thus have a surface area in the range of the smallest group of wheat starch granules. (See drawing accompanying Installment I.) The average surface area of the corn starch granules is then about 1½ times greater than the average of wheat starch, and the rice granules have an area about four times as great.

Since the starch granules are in the micron range in size, their outline can readily be seen with the aid of the ordinary microscope. The limit of the size of particles which can be noticed by means of this instrument is usually given as ¼ of a micron, but the outline of such small particles is not distinct. This is because the wave lengths of light average longer than ¼ micron, and hence are not readily reflected by such small surfaces. When objects are several microns in diameter, such as the starch granules, then the light waves are reflected and the outline of the granule can easily be seen.

While the starch granules in flour are readily observed by means of the microscope, the outline of the protein cannot be seen. Stains, however, can be used which will reveal the presence of the

protein. By such means Alsberg (1927) observed that in hard, high protein wheat flour the starch is imbedded or surrounded by the protein or gluten material. In such flour relatively few granules are free. In low protein soft wheat flour the gluten matrix is less dense, and hence more granules are free. Observations on dough mixing show that doughs from soft wheat flour are wetted much more rapidly than doughs from hard wheat flours. It seems that this more dense gluten matrix, or network, which envelops the starch granules in high protein hard wheat flour is not as readily penetrated by water as the less dense matrix in low protein wheat flour. Hard and soft wheat flours differ among themselves in their mixing requirements, but that is another subject.

(To be continued.)

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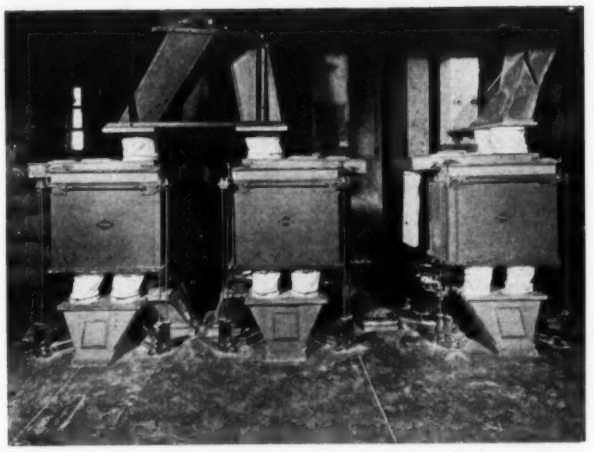

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Bugs Are "Tough Customers"

You've Got to Track 'em Down

RECENTLY I had occasion to work over a number of roll stands that were several years old and had been taken out of a flour mill and stored in a warehouse, to be used in milling feed later on. It was decided to work over all feeders and housings before installing the roll chills, and the job fell to me.

Every one of these stands was literally "alive" with crawling flour beetles when we began our little job. We sprayed everything in sight every morning. Then a hard freeze came along and held for about a week. My happy thought was that that would be the end of our insect trouble, as far as those rolls were concerned, for they were in an unheated room and seemed to get pretty cold, through and through. But—as soon as warmer weather returned we were up against the same old bugs again—or their children or grandchildren.

I decided to spend as much time as it would take to find out where these boys and girls had been residing during the period of low temperature. They hadn't liked the weather, and while the cold lasted they stayed "indoors"—somewhere. All the machines had wooden housings. Some had roll feeders and some shaker feeders. We started with one of the shaker feeders and removed the whole housing, turning it upside down on the floor, for a good examination. At the first look the inside of this housing seemed to be free from bugs, except for a few lively ones in the opening provided for suction. But when we began to dismantle the thing we found plenty of husky adults in the cracks and crevices that had been covered by overlapping parts. There was plenty of brownish dust in these crevices, too, and the bugs seemed to be living right in this stuff.

Next we dismantled a roll-type feeder. It was pretty bad. Most feeders of this type have a metal trough under the feeding roll, this trough being attached to the wood part of the housing with screws. There was evidence that a good many efforts had been made to get the stock fed to spread all along the roll to both ends. In these efforts attachments of doubtful patentability had been used. In the main they must have been quite intricate, and in installing them the wood had been slivered quite a bit and pretty well crowded with screw holes, all nice and rough inside and at their beginnings. In every hole and in every little crevice adult beetles were visible, and it stands to reason that down inside there were plenty of eggs or insects in various stages of development.

Now it seems to me that if we are ever to rid roller mills of insects some way of getting an insecticide right down into the insides of the feeders will have to be devised. I have fumigated a good many roller mills in my time, and with most of the better known fumigants, and it has often occurred to me that better precautions should be taken to keep the fumigant where it will do the most good. It seems to me that a heavy gas could be trapped in the housing, below the roll chills, with the stock spout plugged up so that none of the gas could go down it and be wasted. Then trap a light gas above the roll chills, and fix things so that this gas would not be lost through a smokestack effect.

It would seem to me that the best way to get fumigants into roll stands should be with a piping system, but what has been said about trapping the fumigants so they would not be able to get away would still go, anyway. The rolls I have been describing had all been fitted for a piping system, but I don't know when it was used last or how it was used.

The only reason why the well-known lethal fumigants do not always kill all the insect life in a roller mill—or in a purifier or reel, or in the entire mill—is because the bugs and eggs and larvæ are not subjected to the effects of such fumigants in sufficient concentration for a long enough period of time.—LUKE MCGLUESON.

Do You Know?

Q.—Which weighs more, a cubic foot of water or a cubic foot of ice?

A.—Liquid water is heavier than ice. A block of ice in a body of free water won't stay down; it will rise to the top and a part of it will stay above the surface. When liquid water freezes it expands. The volume of a given weight of ice is therefore nearly 12/11ths that of water. The "specific weight" of ice is about 0.9166—which means that liquid water weighs about 1.09 times as much as ice.

Q.—Which is heavier, milk or sea water?

A.—Milk. Ordinary sea water weighs approximately 64.05 lbs per cu. ft., while the average weight of a cu. ft. of milk is about 64.42 lbs. The weight of a cu. ft. of pure water at a temperature of 39.1° F. (the point at which it is heaviest) is 62.425 lbs.

Q.—What is air made of?

A.—Atmospheric air contains nitrogen, oxygen, carbon dioxide, water vapor and traces of other compounds. By weight, the nitrogen amounts to about 75.5; the oxygen, about 23.2%, and the carbon dioxide and other compounds, about 1.3%.

Q.—Is air a chemical compound?

A.—No. The nitrogen and the oxygen are merely mixed together, and the carbon dioxide, hydrogen oxide (water) and other compounds present are merely mixed with the nitrogen and oxygen.

Q.—What is iron?

A.—Pure iron is an element, but "iron" as we are familiar with it contains other elements in combination with iron. A compound of iron is essentially present in the blood of human beings and the other animals, and a deficiency of it is extremely detrimental to health. The iron

included in enriched flour must be in an assimilable form. When a compound of iron is used the quantity specified refers to the quantity of pure iron, and not to the total weight of the compound.

Commercially, iron is obtained from ores which contain many substances besides iron. The ore is treated in a blast furnace. Coke, consisting almost entirely of carbon, is used to produce the heat required for "smelting." The ore and the coke are placed in a blast furnace and the coke is ignited. Oxygen to support combustion is supplied by air forced into the furnace by a powerful fan, through conduits called "tuyeres." The ore usually contains impurities of the nature of silica, alumnia and other earthy substances, and limestone is added to the ore and coke in the furnace so that it will combine with the impurities and form slag. The melted iron separated from the slag contains some carbon, usually about 4%. The molten iron is drawn off and cast into blocks called "pigs." When cooled, these are called "pigs" of cast iron. Iron is the chief ingredient of all steel.

Q.—What common substance can hold the most heat?

A.—Water. More heat must be added to water to increase its temperature a given number of degrees than is the case with other substances, such as alcohol, or sand or salt. Water therefore gives up more heat when cooling than any of the other substances mentioned. "Hot water" bottles are extensively used in the sick room because when a rubber bag is filled with hot water it will "stay hot" longer than a bag containing salt or sand. This is because it can give up more heat and still retain more heat.

Q.—How does a vacuum cleaner "work"?

A.—The "heart" of the device called a vacuum cleaner is a powerful fan. This fan is arranged to force air rapidly into some sort of a chamber from which it can escape at a lower speed, after encountering some medium which tends to separate out solid matter in the form of dust or dirt. The same amount of air that enters the chamber must be discharged from it, of course, but the area of the discharge openings is many times as large as that of the opening through which the air is forced in, and the outgoing velocity is relatively low.

As the air is thrown toward the chamber, an equal volume of air forces itself into the fan. As the pressure on one side of the fan is greater than that of the atmosphere, so the pressure in the duct leading to the other side of the fan is lower than that of the atmosphere. The fan is said to be producing "suction," and there is a condition of "partial vacuum" in the duct. This condition is maintained in the nozzle used for taking up dust and dirt, and it is really that pressure of the atmosphere which is *above the pressure in the "suction" duct* that creates the strong currents of air which carry dust and dirt with them.

Q.—Why does the exhaust of an automobile engine have the appearance of steam in cold weather?

A.—A large portion of the exhaust of an automobile engine *is* steam, or water in the form of vapor. Hydrogen is a component of gasoline; the power developed in the gasoline engine is partly derived from the combustion of hydrogen. This "combustion" is merely the combining of the hydrogen with oxygen, just as the carbon of the fuel combines with oxygen, with the generation of heat, during the process of combustion. When combustion is complete, one atom of carbon combines with two atoms of oxygen to form carbon dioxide, and two atoms of hydrogen combine with one atom of oxygen to form hydrogen oxide, or water. Both oxides are hot when discharged from the engine, and both are invisible, but in winter the water vapor rapidly loses sufficient heat to cause a part of the vapor molecules to condense. The tiny droplets thus formed reflect light, giving a white appearance to the whole.

Carbohydrates—starchs, sugars and the like—also contain both carbon and hydrogen capable of combining with oxygen and generating heat. In the digestion of foods, combustion proceeds very slowly, but the same amounts of carbon and hydrogen generate the same amount of heat when combination is complete. The products of combustion—carbon dioxide and water—are exhausted from the lungs of animals just as they are from the cylinders of internal combustion engines. That's why the breath has the appearance of steam in cold weather, just as does the exhaust of an automobile engine.

EDITOR'S NOTE.—Some of these questions originated with readers, while others are included merely because of their general interest. An effort will be made to provide the answer to any such question sent in.

Cooling Diesels

(Continued from page 16a.)

The thickness is usually in proportion to the diameter of the cylinder. If a cylinder has a diameter of 6 in the wall will be around ½ in to withstand a given pressure, while a cylinder with a diameter of 12 in will require a wall thickness of 1 in to handle the same pressure. It is true that certain minor variations in thickness are found sufficient to care for thermal stresses and provide sufficient additional metal for reboring the cylinder. In general, however, this relation of wall thickness holds true. When the same quantities of heat are to be dissipated or transmitted per sq in across metals of different thicknesses there must be, according to designers, a greater temperature drop across the thicker metal.

For example, when a fixed quantity of heat is to be transmitted—say 40,000 btu per sq ft per hour—there should be the same temperature drop across each unit of thickness, which for cast iron is in the neighborhood of 1° F. for each .01 inch of thickness. These temperature drops or gradients required to transfer the heat from the gas to the cylinder walls and from the cylinder surfaces into the water are constant for nearly all engine sizes. Consequently larger cylinders with thicker walls require cooling water quantities in proportion to the cylinder diameter. One rule proposed is that good water outlet temperature is equal to 190° minus 4 times the cylinder diameter in inches. The rule is subject to variations of plus or minus 10° F. to take care of load conditions and engine design.

Cylinder liners are not usually as thick

200% and 70%

The number of Haaky Grain Cleaning Machines purchased in 1941 doubled any previous year.

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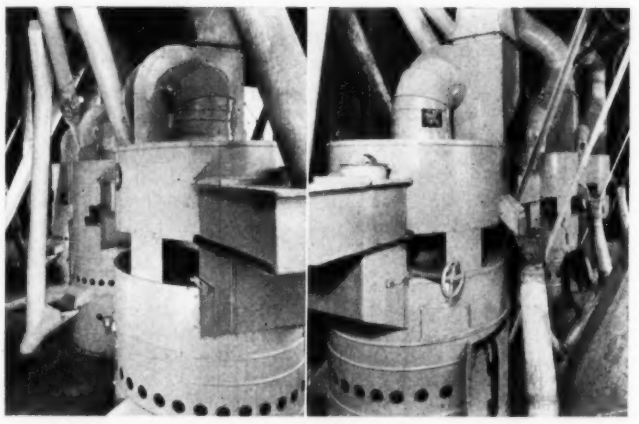

The 3 Rotary Milling Separators above are used on a 500 bushels per hour wheat stream. They are a part of the 23 Haaky machines installed in a large Southwestern mill.

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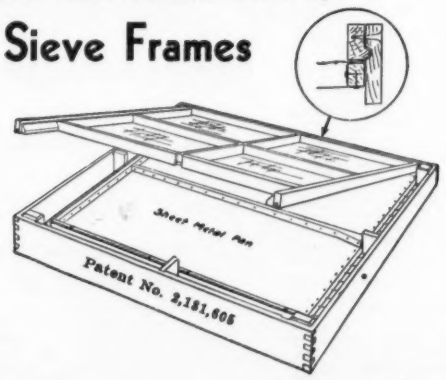

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as one-piece cylinders of equal diameter, and the outlet temperatures from engines with liners might well make use of plus 10° F. variation. This means that for an engine with a 15-in cylinder bore, the outlet water temperature of 190° —4×15 equals 130° subject to a variation of plus or minus 10° F. If the cylinders use liners, a temperature of 130° plus 10° equals 140° F. However, if the engine is heavily loaded, the 130°—10°, or 120°, would be more suitable for protection.

Liners may be somewhat thinner than cylinder walls cast with jackets because better metals may be used and no allowance for reboring need be provided. When casting cylinders as a unit it is the practice to allow a slight additional thickness in the metal to offset the possibility of irregularities in the jacket core. Combining these factors which favor liners over unit cylinders castings, it is found that liners are usually .75 to .9 times as thick as regular cylinder walls.

Liners are made of alloys which have a higher allowable stress than the allowable stress for good cast iron, a factor which reduces the thickness of the liner.

A cooling requirement is that the temperature of the inlet water should be kept as near the outlet water temperature as possible. This requires large quantities of water. The result, however, is good cooling action and uniform temperatures throughout the metal. The question naturally arises as to how near the inlet water temperature should approach the outlet temperature. From the standpoint of good cooling, the two should be as near the same as it is possible, while from an economical and physical standpoint there are practical limitations. When the rules for quantity of water are observed, it will be found that the temperatures of the inlet and outlet water will be from 10° to 20° F. apart. Engines not having water-cooled exhaust manifolds will usually have a temperature rise of from 10° to 15° F. When the cylinder jacket water is also passed through an exhaust manifold jacket before passing the thermometer, the temperature rise will be somewhere between 15° and 20° F. A common "rule of thumb" on cooling known to many operators states that the heat lost to the jacket water is about equal to the heat lost in the exhaust gases, and that either is about equal to the heat converted to work in the engines.

This question of temperature differences between inlet and outlet water is one that should be studied by the operator in relation to his own engine and operating conditions. If an attempt is made to use the waste heat of either the jacket water or the exhaust gases, or both, this discussion will serve to show that it is necessary to obtain definite facts on the heat available for recovery from your particular engine. The manufacturer is the proper source for this information. Much experience has been accumulated and many applications of waste heat utilization have been made.

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——BREAD IS THE STAFF OF LIFE——

"Long storage of flour has shown an increase in hydrogen ion concentration. It is generally considered that flour improves some in baking value after the first few weeks of storage. Some of these improvements are probably related to the changes which take place in the lipoids."—C. O. Swanson, in "Wheat and Flour Quality."

——BREAD IS THE STAFF OF LIFE——

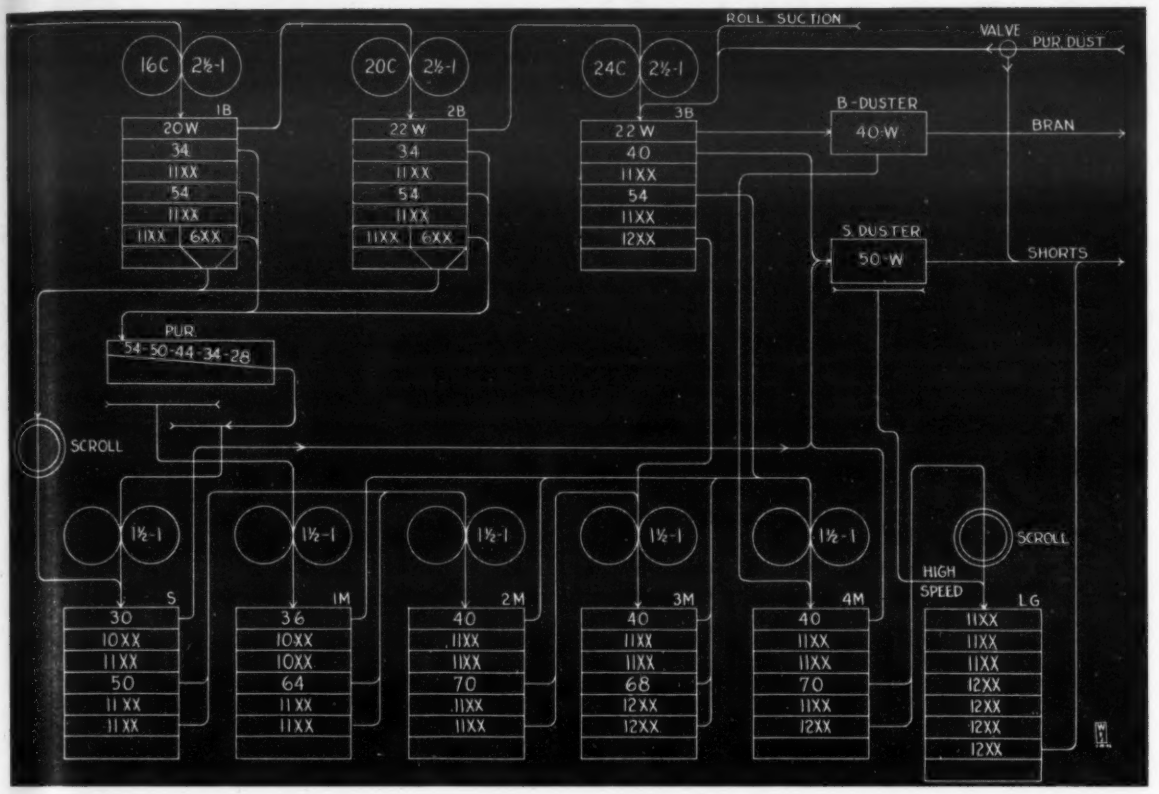
"SCRATCH" ROLLS

ABOUT 25 years ago millers in the United States often employed "scratch" roll for reducing sizings and middlings. At one time it was said that a British concern secured a patent in this country on a system of reducing middlings which used rolls with 80 "scratches" to the inch. At least one mill-furnishing establishment in the United States did some business by furnishing rolls scratched 78 or 79 to the inch.

An examination of the surfaces with a magnifyihg glass showed a series of very narrow grooves (they had to be narrow, to allow nearly 80 of them to lie side by side in a space only 1 inch wide). They were literally "scratches." They might have been valled "V-shaped," but of course the tool used in making them was not sharp enough to cut a true V. The "flutes"—as they were called in England—very much resembled the grooves of a fine file, except that they were not so nearly perfect.

Apparently millers both in America and England do not now make a distinction between "scratch" rolls and roll corrugated with about 32 cuts to the inch, or more. According to English milling literature, even the coarse corrugations of the 1st bk are cut in such a manner that there is probably 25% of "land" between them. This ratio of land to groove appears to be about the same whatever the number of cuts to the inch, but as the cuts grow shallower as they diminish in width, there could be no "land" at all if 50 or 60 (or 79, as before mentioned) grooves were cut so that they were enough to be visible.—J.W.B.

★ SHORT SYSTEM FLOW ★



The program for a 3-break, 75-bbl flour mill published in the December, 1941, issue of this journal attracted a great deal of attention. Several letters addressed to its author, "Missouri Miller," have been passed along to him. In one instance the owner of a mill located in the Southeast expressed the wish to observe the small plant's operation personally and to talk the program over with the man who devised it. More recently, T. O. DeLaporte, of Independence, Mo., commented on the layout and offered a diagram illustrating several suggestions. Both the diagram and the comments are reproduced herewith.

"The flow sheet of the small mill in the December issue of MILLING PRODUCTION was unusually interesting to me," writes Mr. DeLaporte, "and I am therefore taking the liberty of offering 'Missouri Miller' a few suggestions for whatever good he may be able to get out of them.

"Before changing the 54 sieves on 1st and 2nd breaks, I would want to be sure that my break rolls were sharp and were not set too close. Personally, I like to break as high as possible, but there really isn't much choice in the matter with a 3-break system. The bolter may not be running at its proper speed, or the 54 sieve may be partly pasted up. But if none of these things are at fault I suggest that the 54's be coarsened up. By all means, it should be seen to that the middlings are well dusted before sending them to the purifier. In the flow I am offering for consideration it will be noticed that I have designated a valve on purifier dust. This will enable the sending of this dust to feed, where it properly belongs. It will be noticed also that I have added a scroll to work on the fine midds through 6XX on 1st and 2d brks. This will help clean up the sizings flour. I suggest sending the bran duster flour to the 4th midds section. Send the shorts duster flour to the high-speed sifter, which has somewhat finer silks. For 70% patent, draw from 1st brk, 2nd brk, sizings, 1st midds, 2nd midds and 3rd midds. It should be possible to hold the yield at not over 4 bus and 36 lbs on good wheat, and the ash should be no higher than at present.

"If 'Missouri Miller' or any other reader of MILLING PRODUCTION would like to discuss these suggestions I would be glad to enter into the discussion."

THE GRIN-MIX

GRATITUDE

"Gosh," said the road hog, as he slowed down for the first time in 40 miles and looked at the wonderful view, "don't you feel glad you're alive?"

"Glad isn't the word," said his passenger. "I'm amazed."

AND FAST

A Chinese cook was walking through the woods. He turned around to see a grizzly bear following him, smelling of his tracks.

"Hm," said the Chinaman, "you like my tracks. Velly good, I make some more."

NO MONOPOLY

A young man addressed a letter to another young man pointing out that he understood the second fellow had been taking his engaged girl out. He requested that the offender call at his office and talk the matter over. Two days later he received this reply: "Received your circular letter. Will be at the meeting."

ASSISTANT

"So, you're a young man with both feet on the ground, eh? What do you do for a living?"

"I take orders from a man with both feet on the desk."

PRACTICAL

Explorer—The jungle was all around us. Ammunition, food and whisky had run out, and we were parched with thirst!

Listener—But wasn't there any water?

Explorer—Sure. But it was no time to be thinking of cleanliness.

IMPRESSIVE

A young lawyer, pleading his first case, had been retained by a farmer to prosecute the railroad for killing 24 hogs. He wanted to impress the jury with the magnitude of the damage. "Twenty-four hogs, gentlemen. Twenty-four; twice the number there in your box."

WHAT'S THE USE?

Mrs. Dolcini—Does your husband worry over the increasing cost of living and the mounting grocery bills?

Mrs. Pometto—No; he says there's no sense in both him and the grocer worrying over the same bills.

MORE ACCURATE

A little girl, spending her first night away from home, began to cry when bedtime came.

"You poor dear," said her hostess. "Are you homesick?"

"No," replied the child. "I'm here sick."

CHANGE OF POLICY

Mrs. Pryer—You advertised this store is under new management, but I see the same manager here.

Bright Clerk—Yes, ma'am, but he got married yesterday!

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Practical Solution to the Problem of

Same Mill - - - But Different Wheat

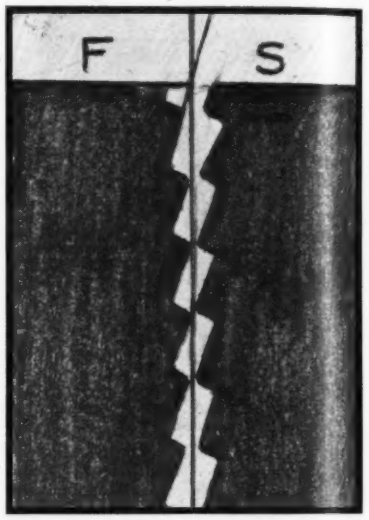
THE manner in which soft wheat is milled does not differ so much from the methods used in milling hard wheat as many suppose. There are many mills—not all of them small or even of medium size—in which hard wheat is milled for a period of time, usually days, and then the mill-mix is changed to soft wheat, without any change in the roll corrugations or the cloths of purifiers and sifters.

Most millers believe that it would be desirable to mill either all soft wheat or all hard wheat on a milling unit, and those who find it necessary to do otherwise hold that they cannot do quite as good work in either case as could be expected with a mill-mix either all hard or all soft. This may be true, but the disadvantages of changing wheat may not be so great as they seem in theory, if proper attention is paid to wheat tempering and to the setting of rolls and the adjustments of purifiers and reels.

Any notion that hard wheat can be made to mill like soft wheat just by tempering it heavily should be forgotten. Hard wheat loses much of its hardness when it is dampened or warmed, or both, but the middlings made from it will not be similar to those made from soft wheat. Soft wheats reduce more easily than hard wheat, and even if hard wheat is conditioned until the berries have exactly the same degree of hardness of soft berries that contain less water or are lower in temperature, there will still be this difference.

As before noted, in many instances it is up to the miller to make good soft wheat flour and good hard wheat flour on the same mill, without any change in equipment. Of course the same type of corrugations must be used, and the spirality or differentials of the break rolls cannot be changed. The most important change that can be made is in the setting of the break rolls. In a mill that must be made to produce both soft wheat or hard wheat flour at a profit, some competent millers believe that the break roll corrugations should be something of a compromise type, a little sharper and deeper than the conventional cuts used for all hard wheat, but not as sharp as might be used for milling a mill-mix that is really soft.

The names that have been given to different types of corrugation may not mean much, for corrugators often devise a cut that does not differ appreciably from some other one and give it a special name. A well-known name is the "Dawson," and such a corrugation is widely used, with small modifications, for breaking hard wheat. For this use the rolls are usually run in a dull-to-dull position. The working side of the corrugation is a straight line, and some millers specify that for the first break the "depth" must be 18°, with suitable modifications of depth for the 2d, 3d, 4th and 5th breaks, when that many breaks are used. This means that the straight line corresponding to the long face of the corrugation is supposed to be at an angle of 18° to a line drawn tangent to the curve of the roll and beginning at the point where the long face begins.



Modified "Dawson" Corrugation

Laid out on a drafting board, the angles of the corrugations can be measured exactly, but when the miller tries to measure them from the corrugations themselves it is very hard to do. As a result, not very many millers give specifications about the angles of the corrugations. Mostly, the corrugator is simply given information about the kind of work the corrugations are expected to do, and his recommendations are taken. If it is desired to modify the break corrugations so that they will produce a high percentage of large middlings when either soft or medium hard wheat is

THIS MODERN PLANT

Marine Elevator "A" 2,100,000 Bus Capacity

of the Marine Elevator Co., Buffalo, N. Y., was recently appraised by the trained engineers of the Appraisal Service Co.

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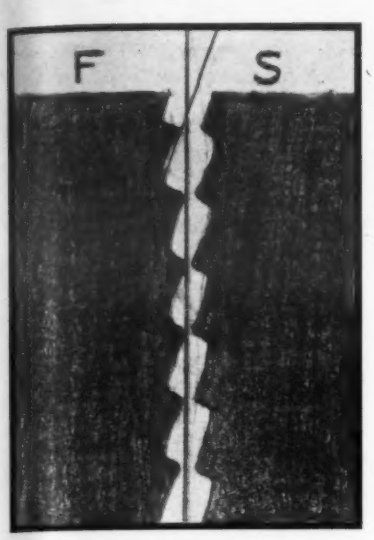

"Hollow-back" Corrugation

milled, a "hollow-back" cut does good work. In this cut the corrugations correspond in some respects to the modified "Dawson," but instead of the working side being a straight line it is curved slightly inward. This actually gives a working face sharper than the Dawson first mentioned, and with proper setting the middlings made from soft wheat will dress very well. The "hollow-back" corrugations are, of course, run dull to dull.—*Simon Redler.*

Mill-Mix

(Continued from page 7a.)

feel and smell. Let us see what can be done with a table constructed, for convenience, to include grain in 10 different bins.

WORK TABLE

Bin No.	Test Weight	Protein, %	Moisture, %
1	58	11.9	12.2
2	55	12.4	10.6
3	57	13.1	14.5
4	59	12.9	12.2
5	60	11.4	10.6
6	58	11.9	12.5
7	58	13.6	13.0
8	57.5	13.8	12.5
9	58	12.6	13.0
10	56.5	12.5	14.5

Observations—	Cost
Ordinary. Sound	$1.02
Ordinary to dark. Shriveled berries. Dark germs.	.99
Slight heat damage. Bleached. Use sparingly.	1.02
Bright and sound	1.05
Yellowish. Sound. Bright	1.00
Ordinary. Bright. Sound	1.02
Suspicious. Some immature. Use with care.	1.02
Very good stuff	1.07
Ordinary. Some durum	1.03
Shriveled. Trace of mustiness. Careful.	.98

While there is no absolute assurance that the quantity of protein in the flour milled from any given wheat blend will be exactly so many points lower than that of the wheat, we must make an assumption based upon past experiences—our own or those of someone else. Just for the sake of illustration, suppose that we are called upon to build a mill-mix from which we can produce a short patent with a minimum of 11.25% protein. This will call for a mill-mix with a protein content of at least 12.6%, taking the protein of patent as 1.25% to 1.40% below that of the wheat. We are, of course, anxious to hold the cost of our mill-mix as low as possible. Looking over the table, it will be seen that we cannot merely draw certain percentages of high, medium and low protein wheats and arrive at the lowest possible cost consistent with the characteristics we must have in our flour. Observe, for example, the wheat in bin 9. For its test weight and degree of soundness its price is comparatively low and its protein equal to our requirements. It contains some durum, however, and its moisture content is

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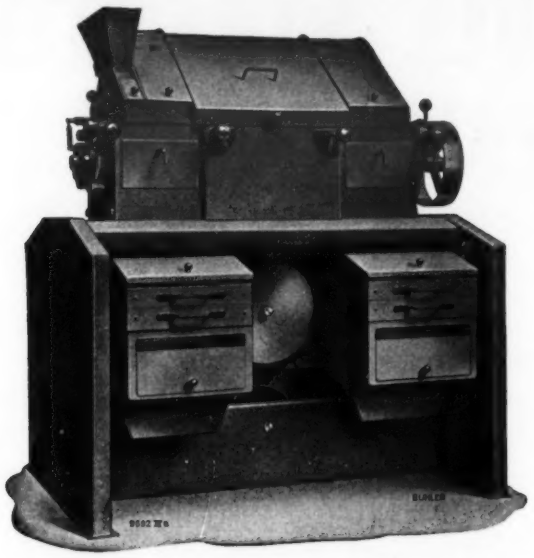

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5—Operates automatically.

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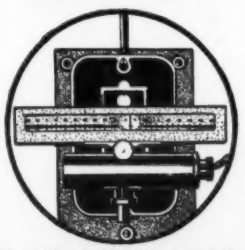

SYSTEM

REGISTERING THE EXACT TEMPERATURE OF STORED GRAIN

A DEPENDABLE WARNING AGAINST OVERHEATING

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ZELENY THERMOMETER COMPANY

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rather high. The lowest priced wheat is in bin 10, and its protein content is nearly up to what we shall want in the mill-mix, but here we have high moisture, low test weight, probably a considerable amount of shriveled berries and a trace of unsoundness. We must be careful with such wheat.

Common procedure among operative millers is to ascertain first of all the figures for average protein per cent, cost, test weight and percentage of moisture of the wheat available, and then exercise judgment in arranging the percentages of each for the mill-mix. In the case under consideration we have 10 bins. If we add all the protein, test weight, moisture and cost figures and divide by 10 we will have the average of all, and our final figures will represent those of a mill-mix made up of 10% of wheat from each bin. For test weight we will have 57.6 lbs; for protein, 12.61%; for moisture, 12.51%, and the cost will be $1.02 bu.

It would not be advisable, however, to use 10% of the wheats from bins 3, 7, 9 and 10. We must find some means of cutting down there without lowering the protein in the blend. Suppose we try this:

PROTEIN

Bin No.	1,	20% × 11.9,	238.0
Bin No.	2,	10% × 12.4,	124.0
Bin No.	3,	4% × 13.1,	52.4
Bin No.	4,	25% × 12.9,	322.5
Bin No.	5,	8% × 11.4,	91.2
Bin No.	6,	6% × 11.9,	71.4
Bin No.	7,	2% × 13.6,	27.2
Bin No.	8,	15% × 13.8,	207.0
Bin No.	9,	9% × 12.6,	88.2
Bin No.	10,	10% × 12.5,	37.5
		100%	1,259.4

Dividing by 100%, we get $\frac{1,259.4}{100} = 12.594\%$ protein

The percentage of protein having been found ample, the next thing to do is to ascertain the cost of this proposed mill-mix. If it is too high, some changes will have to be made, but since these changes will necessitate the inclusion of larger quantities of cheaper and less desirable wheats than we have chosen, the facts should be presented to the management. We arrive at the cost of our tentative mill-mix in the same manner used for calculating the protein.

COST

		%	Cents	
Bin No.	1,	20 ×	102,	2,040
Bin No.	2,	10 ×	99,	990
Bin No.	3,	4 ×	102,	408
Bin No.	4,	25 ×	105,	2,625
Bin No.	5,	8 ×	100,	800
Bin No.	6,	6 ×	102,	612
Bin No.	7,	2 ×	102,	204
Bin No.	8,	15 ×	107,	1,605
Bin No.	9,	7 ×	103,	721
Bin No.	10,	3 ×	98,	294
		100%		10,299

Dividing by 100% we have $\frac{10,299}{100} = 102.99$c, or $1.03, nearly.

Before submitting the price figure to the office for approval or disapproval, it may be advisable to get further facts about this tentative mill-mix for consideration in connection with any price lowering proposal. It will not be difficult to calculate the test weight and the moisture content, following the same procedure before used.

TEST WEIGHT

Bin No.	1,	20% × 58,	1,160
Bin No.	2,	10% × 55,	550
Bin No.	3,	4% × 57,	228
Bin No.	4,	25% × 59,	1,475
Bin No.	5,	8% × 60,	480
Bin No.	6,	6% × 58,	348
Bin No.	7,	2% × 58,	116
Bin No.	8,	15% × 57.5,	862.5
Bin No.	9,	7% × 58,	406
Bin No.	10,	3% × 56.5,	169.5
		100%	5,795.0

Dividing by 100% we find the test weight to be $\frac{5,795.0}{100} = 57.95$ lbs per bu.

From this figure we can judge the probable flour yield, using wheat at first break rolls as a basis. We need to know, however, something about the moisture content of the mill-mix, for our flour yield will be affected to some extent by that and it will mean a great deal in connection with the total yield of flour and feed.

% MOISTURE

Bin No.	1,	20% × 12.2,	244.0
Bin No.	2,	10% × 10.6,	106.0
Bin No.	3,	4% × 14.5,	58.0
Bin No.	4,	25% × 12.2,	305.0
Bin No.	5,	8% × 10.6	84.8
Bin No.	6,	6% × 12.5,	75.0
Bin No.	7,	2% × 13.0,	26.0
Bin No.	8,	15% × 12.5,	187.5
Bin No.	9,	7% × 13.0,	91.0
Bin No.	10,	3% × 14.5,	43.5
		100%	1,220.8

Dividing by 100%, the moisture content of the mill-mix is found to be

$\frac{1,220.8}{100} = 12.208\%$

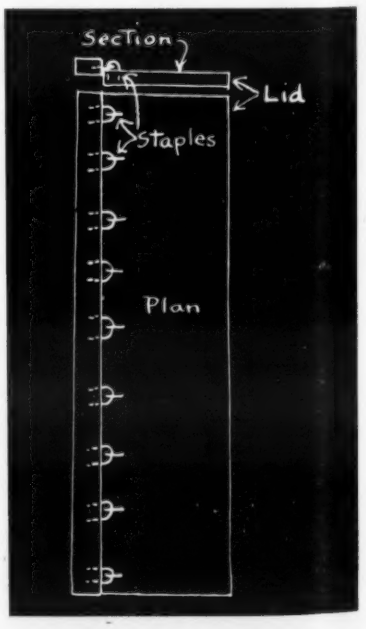
Assembling the figures and drawing upon the comments relative to the various wheats used, we now have a tentative mill-mix costing $1.03 bu. Its apparent soundness characteristics are good. It carries about the percentage of protein that will be required, and its test weight and moisture content are favorable. It is readily apparent that the cost can be lowered only by making some characteristic factor less favorable.

EDITOR'S NOTE.—This material is taken from the book, "Studies in Practical Milling."

——BREAD IS THE STAFF OF LIFE——

Emergency Hinge

THIS sketch shows how you can make your own emergency hinges out of ordinary staples. For instance, if it is desired to hinge a board, drive two rows of staples—one row horizontally, and the other row vertically through the remaining "eyes" of the first driven row



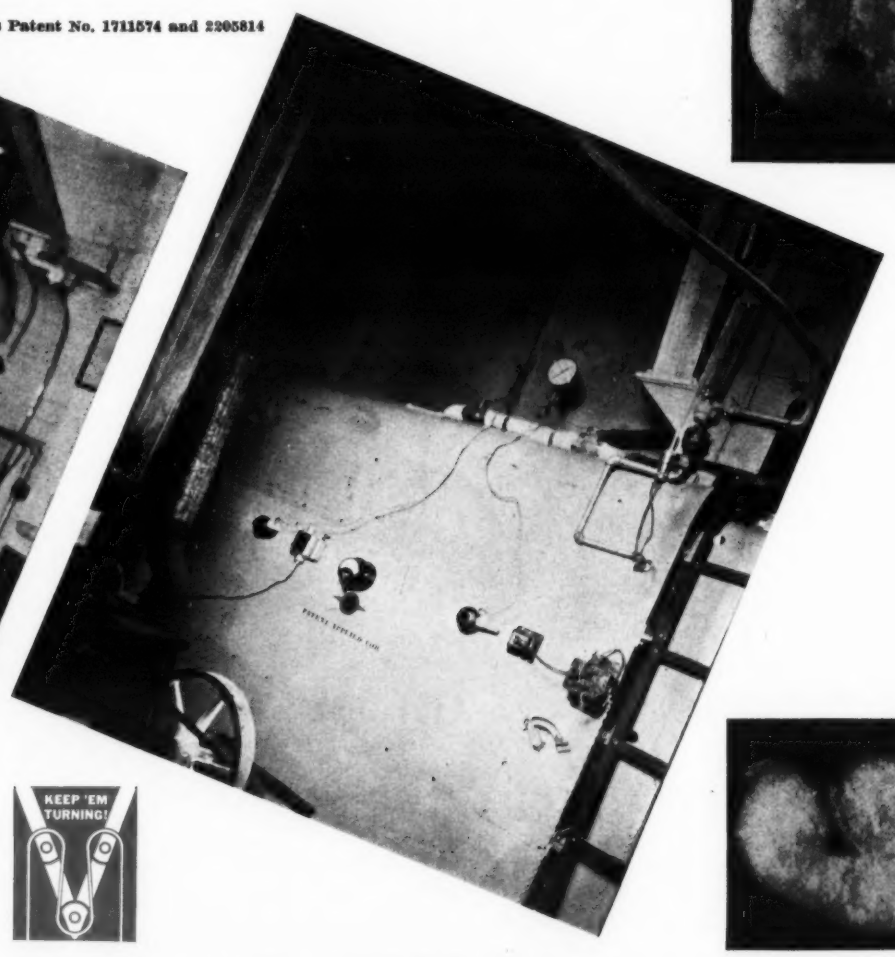
Hinge Made With Staples

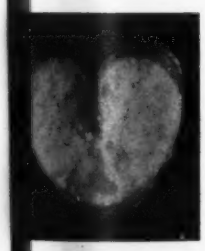
of staples. Drive the staples accurately, each the same distance into the wood and each carefully placed. A first class hinge will be the result. Use as many staples as may be needed to give the hinge its desired strength. It will not be the equal of a manufactured hinge, of course, but for an emergency job it will do very well.—W. F. S.

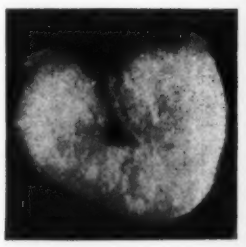
in big mill *or* little mill

with hard wheat, soft wheat, medium wheat—

U. S. Letters Patent No. 1711574 and 2205814







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Particularly Effective in Improving the Products of Light Test-Weight Wheat

LET US TELL YOU HOW YOU CAN MODERNIZE YOUR MILLING PROCESS—IMPROVE YOUR PRODUCT —SAVE MONEY—MAKE A PROFIT!

THERE'LL NEVER BE A BETTER TIME THAN NOW!

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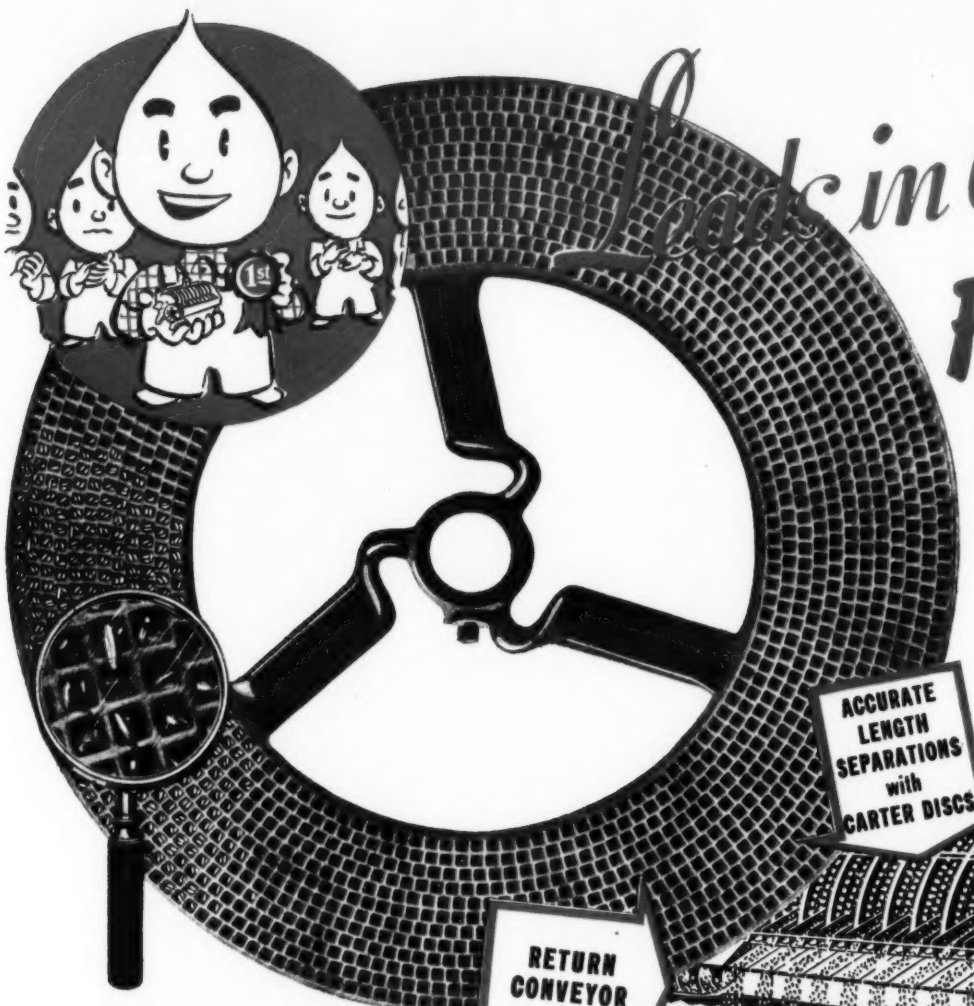

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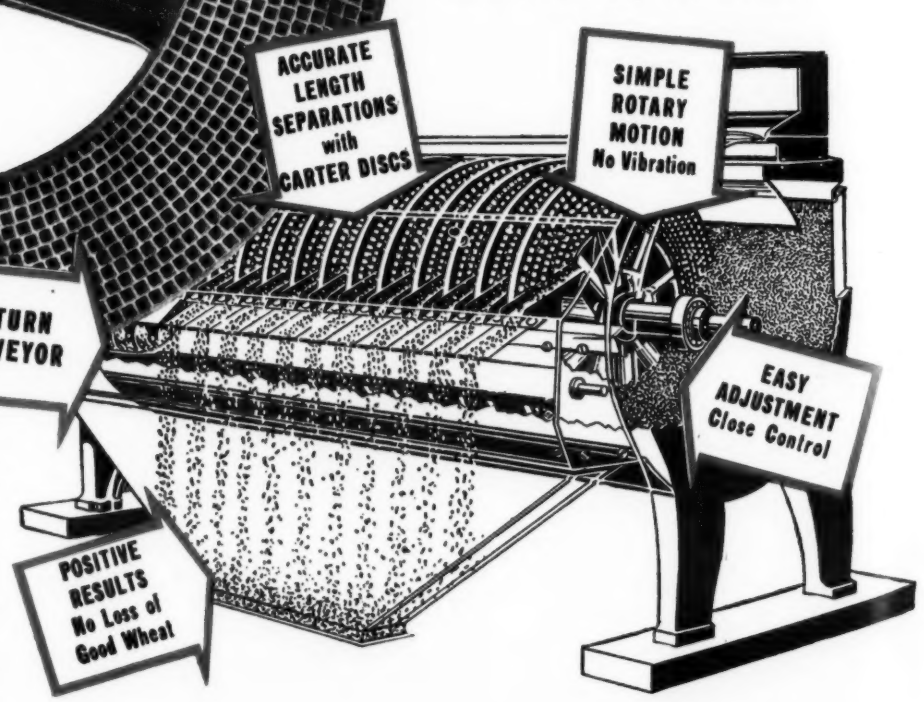
ACCURATE LENGTH SEPARATIONS with CARTER DISCS
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RETURN CONVEYOR
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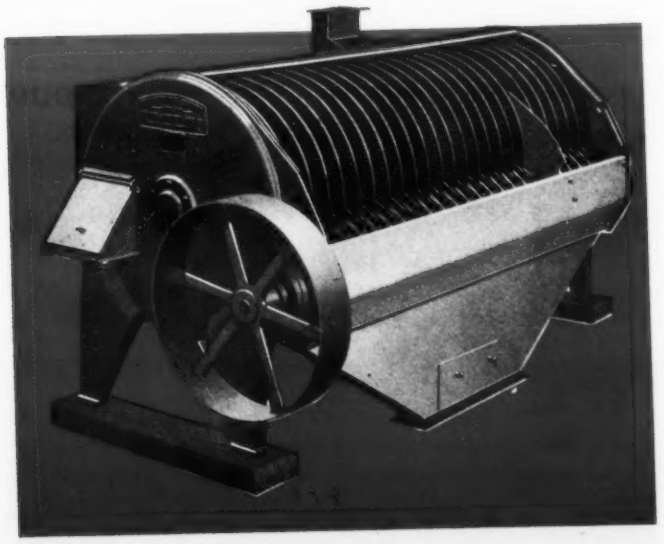
POSITIVE RESULTS No Loss of Good Wheat

FIRST IN CONTROL OF RESULTS

Hart-Carter's return conveyor for the recleaning of grain is plainly visible to the operator, is easily accessible and can be adjusted for any degree of cleaning thoroughness desired. Grain can be sampled at any point the full length of the machine and the discharge from any disc can be diverted to the conveyor simply by lifting the trap door opposite that disc. The Carter Disc Separator is the only pocket type machine, disc or cylinder, offering these outstanding advantages. Hart-Carter is the originator of the recleaning feature in pocket type separators.



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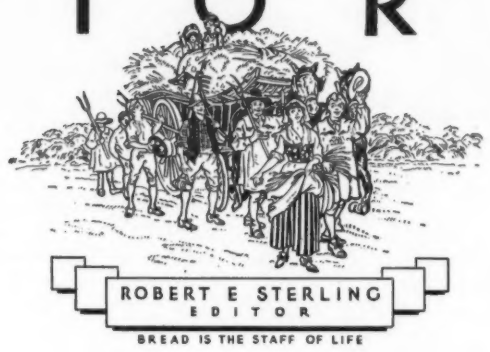
EDITORIAL



NO ACTUAL BAG SHORTAGE IN SIGHT

UNQUESTIONABLY authoritative and reliable information in our possession shows that unfilled orders for cotton bags to be used as containers for the products of the flour and feed milling industries are sufficient to supply these industries, based on actual consumption in 1941, for not less than five months. Even taking into account the somewhat increased use of cotton bags to replace burlaps, it is apparent that bags now booked with manufacturers by flour and feed millers are almost sufficient to cover their requirements for the balance of this crop year.

Thus it quite clearly appears that the current unrest, in instances amounting almost to alarm, is not due to any immediate or near future situation but almost wholly to the inability of millers to add without limit to their present large bookings,—including numerous instances of efforts to make contracts for a full year ahead. Much of this effort to buy far in advance doubtless is due merely to a desire to safeguard the future; some unquestionably can be only described as hoarding; a part certainly arises from hope of profits through still further price advances. Whatever the cause, it is perfectly clear that the present "bag shortage" is not actual but almost wholly the result of the same kind of "foresight" that is responsible for the current buying panic in sugar.

The harmful effects of this in the cotton bag market are severalfold. Included are the obvious but inescapable inequalities in the service rendered to their customers by bag manufacturers, the by no means impossible hazard of money losses in excessive forward purchases (particularly in view of the new plan whereby C.C.C. is to turn cotton over to war agencies without price), and, finally but most importantly, the obvious probability that these industries may bring down upon themselves by their own acts what they most fear—quota controls.

Through the past several months, more especially since Pearl Harbor, we have seen this same situation in other commodities. Memory of the almost completely phoney eastern states gasoline shortage is still green if not fragrant in memory. Later there was the absurd hoarding of silk stockings and typewriter ribbons, currently there is hoarding of women's girdles and of all sorts of inconsequentials by many people in many fields. At the moment we have the sugar "shortage" already referred to, in considerable part the creation of loud-mouthed officials, but causing the country's pantries to be piled high with vaguely needed sugar and housewives to sneak home ten pounds on each trip to the grocer. Meanwhile, the dispatches reek with stories of the printing of millions, or billions, of quota tickets despite the probability that no reasonable person is likely to experience more than casual inconvenience because of any real shortage of sugar.

We can appreciate that every flour and feed miller, with a sense of responsibility for the operation of his plant and care of his customers, must feel the need reasonably to safeguard his bag requirements, just as we have sought reasonably to protect—aside from price—our modest needs for paper and ink. Yet this fair precaution surely does not include insistence upon further forward contracts for bags on top of current average bookings of a five months' supply. This means creation of a false situation not only in the bag manufacturing industry but extending backward to include textile mills already burdened with huge war orders and limiting sales to the trades to ninety days delivery.

The priority claim for cotton cloth for essential use as food containers ranks both in common sense and in recognition by government almost next following actual military requirements. Why, in this situation, alarm should arise merely because unlimited future delivery purchases cannot be made is quite beyond all reason, particularly in view of the already mentioned circumstance that it may force quota action, with the accompanying probability that existing contracts will be terminated and the "forehanded" thus be no better off than anyone else.

We have no fish of our own to fry in this situation nor have we any superior wisdom, but we do feel that these great cotton bag consuming industries will serve their own as well as the nation's interest by getting back into the boat and thereafter being willing to share fortune with the rest of the country, including their competitors.

——BREAD IS THE STAFF OF LIFE——

SQUEEZED FLOUR

WE are determined not to lose whatever sense of proportion we possess in contemplating the possible effects of squeezing flour. According to Dr. Henry G. Knight, Chief of the Bureau of Agricultural Chemistry and Engineering, application of a pressure of sixteen thousand pounds will compress flour to two thirds of its normal bulk. When subsequently aerated, however, it produces a loaf of bread from fifteen to twenty per cent smaller, although the nutritional qualities are the same as in a normal loaf. The loaf merely would be smaller and heavier—same grub in less space. Experiments now are being conducted in restoring the air to the spaces between the flour particles so that normal bread will result from baking.

Without possessing scientific knowledge or apparatus and with virtually no ability whatever in inventing things, we could direct Dr. Knight to where he could find out all about making a big loaf out of little flour, squeezed or unsqueezed. We merely would send him to some of our friends in the baking business who have developed such ability in the production of "balloon loaves" that he could add as many more thousand pounds of pressure as he liked and a pound of dough could be made to turn out a loaf ten to twelve inches long and as high up in the air as anyone wished, although perhaps a trifle attenuated in the third dimension, with a width, say, of four inches or a trifle less. This is just simply a matter of blowing it up with, by observation of our own palate, the virtual elimination of all taste.

The idea of the compressed flour is, of course, to reduce the shipping space required for lend-lease shipments and, later on, for supplying bread to the scores of millions of people everywhere in the world, large number of whom will look longingly to this continent for the bread which they now so grievously lack. This in itself is a perfectly sound idea and one which we hope can be made practical.

Here again we wish to make a potent and practical suggestion for accomplishment of the desideratum. What, for instance, more to the point than discontinuing the shipment of wheat, with its enormous use of steamer space, and shipping instead fine white flour, with all of the husk, hull and less nutritious parts of the wheat berry kept where the wheat is grown and used for animal feeding, which is their best and most desirable economic and nutritional function? Ever since the economic inventors undertook to "program" agriculture their efforts, at least until the modest export flour subsidy enterprise, were directed toward the exportation of wheat. In this they have had, of course, the ardent support of millers in importing countries, who have, incidentally, set a new high in milling profits by the wheat shipping preference of our programmers. Just shipping the flour will take care of the business of economizing shipping space without the slightest squeezing or restoration.

——BREAD IS THE STAFF OF LIFE——

ENRICHMENT NEWS

FOLLOWING is the essential text of a letter we have from a not very large independent hard wheat miller who has a materially greater percentage of family flour trade than most millers in his section:

"We are spending around twenty-five cents a barrel in public education about enriched flour, and we are one of those who continue to enrich every barrel of our best flour. We feel that our work is beginning to have effect.

"As an illustration, we have been shipping enriched flour to a good sized wholesale grocer ever since the campaign started. A little while ago he requested that the enrichment be left out. Since he has been our customer for around twenty years we could do nothing but accede to his request.

"About this time some of our consumer trade enrichment promotion letters went into his field with the result that this week when he supplied directions on a car he requested that it be enriched. Pretty clearly this was reaction from our consumer education campaign.

"I myself have more faith in the future of enrichment than I had a while back. While I am disappointed by the small amount of effort put back of the program by many of our neighboring millers, I am sure the program has merit. Anyway, we are sticking to and backing our own program, the car mentioned being the only case in which we have broken away since the very beginning."

We know as a result of several informal discussions of the subject with this particular miller that he gives an exact picture of his experience through the past year. His faith in enrichment both as a service to better nutrition and to the milling industry all along has been sufficiently strong that when other millers lost interest because of evidences of consumer indifference, he increased his own efforts to promote sale of enriched family flour, with the result told about in his letter.

Many things suggest that the whole future of the flour and bread enrichment ambition depends largely upon this long-time "hammer, hammer, hammer on the hard highway" promotion through the years. Unfortunately, the government-aided nutritionist promotion in the early months of the campaign quite obviously promised too much and took in far too much territory. The result quite naturally was a backwash of lack of faith. Now we see, as evidenced by the letter here quoted, that the promotion job is likely to be accomplished, as most good things have in the end to be accomplished, by the step-by-step efforts of the men in the ranks rather than by the high-powered shots in the arm by boys with big names swinging big promises.

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ENERJO

the high quality flour with the wheat germ milled in.

Bakers using *Enerjo* are capitalizing in their merchandising and advertising on the flavor, and the added nutrition from natural sources, milled into this flour, and retained in the bread they sell.

Get next to this opportunity. *Enerjo* is sold both plain and enriched, in either case the supreme flavor of the wheat berry is in it, and is transmitted to the baked loaf. The demand is on for this type of enrichment—something that the bread buyer can recognize at once.

A trial order of *Enerjo* will convince you.

WABASHA ROLLER MILL COMPANY

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LA GRANGE FLOURS . . .

whether plain or enriched, remain the same high standard, dependable flours that have characterized the products of La Grange Mills over the half century and more of their operation.

This quality pattern is not an accident but the result of painstaking care in wheat selection and careful milling.

☆

You can depend on LA GRANGE FLOURS

☆

LA GRANGE MILLS RED WING MINNESOTA

The British Co-operative Movement

By H. Norman Smith

In "Britain Today"

MOTOR along any English main road, and you will soon meet or pass a lorry labelled "C.W.S." The Co-operative Wholesale Society is one of Bitain's biggest businesses; but it is only part of the wider Co-operative Movement, in which 8,700,000 persons are banded together for mutual trade—to share out, as dividend on purchases, the surplus an ordinary trader would call profit.

War has not hit the Co-operative Societies harder than it has hit anyone else. Despite the call of the services and the fusion of homes, co-operative membership and sales, which had been rising almost uniformly during more than half a century, continued to rise in the first war year, though some of the sales increase was due to higher prices. Only about 2% of share capital was withdrawn—proof of members' confidence. War, indeed, helps the societies to the extent that it hinders other traders' specialties. The family grocer's "service" suffers from staff depletion; the bazaar's "price uniformity" breaks under control and the purchase tax; the shopkeeper who "stocks all makes" finds his supplies curtailed; but the co-operative society's specialty, "dividend," remains.

Fierce individualism resists the tireless efforts of people who seek to amalgamate the many co-operative societies into fewer and larger units. There are still 1,065 retail co-operative societies in Britain, compared with 1,188 a decade ago. Each is independent, with its own management committee elected by the members (though in some big societies the full-time managers supply the real drive). These 1,065 units are loosely knit in two ways: they have put up the £200,000,000 capital of the wholesale, banking and insurance concerns; and they maintain a central office, the Co-operative Union, which, controlled by a central board elected indirectly, gives them an efficient intelligence service, both legal and commercial. The societies send some 2,000 delegates to the Co-operative Congress, styled by courtesy "the annual Parliament of Co-operation," though really it is only a debating society, because its decisions are not binding.

The movement was founded in characteristically British fashion, not by persons keen on a theory, but by work-a-day folks, who, having found it expedient to club together to buy a bag of flour and a sack of potatoes, decided at Rochdale in 1844 to start shopkeeping, supplying their mutual needs on a basis of sales at current prices with return of net surplus as dividend on purchases. Speculation was barred by provision for the withdrawal of shares at par; democratic control was promoted by the rule of "one member, one vote" at society meetings, irrespective of the amount of capital held.

Most, though not all, of the Rochdale pioneers were working men. The richest of them put down £5; one, a manufacturer, £1. Together they raised £28 to start business; and after 12 months their turnover was at the rate of £1,500 a year. Today the retail societies' share capital (apart from the £200,000,000 they have put up for wholesaling and insurance) is £156,000,000, and their yearly trade a few pounds short of £299,000,000. This much have Rochdale principles achieved in less than a century.

But behind this imposing façade are some weaknesses. Average retail purchases of the 8,700,000 members are no more than 13s 2d a week—almost exactly the same as 25 years ago, and only 2s 4d more than 60 years ago. Even assuming a mean of two shareholding members to a family, the co-operative household spends only some 26s a week at the stores, which means that other shops also get some of the family's trade. Another defect is the apathy shown at committee elections. Of the London society's 776,000 members, fewer than 10,000 trouble to vote.

Still another weakness is that co-operative trade is confined mainly to a few staple foodstuffs (groceries in 1939 accounted for £95,000,000 of the £131,000,000 C.W.S. turnover). When wartime rationing began, the societies' sugar registrations were 30% of the total population of Great Britain and Northern Ireland; butter registrations, 26%, and bacon, 24%. Milk and bread account for much of the movement's total sales; but analysis in 1936 disclosed that its share of Britain's retail trade was only 13.8% for coal, 9.1% for footwear, 6.6% for wearing apparel, and 3.5% for furniture and hardware.

Yet the C.W.S. and its Scottish counterpart own modern works making good furniture and hardware, besides factories producing shoes, soap, radio sets, lamp bulbs, tobacco and foodstuffs. They have flour mills at the ports, tea plantations in the tropics, ships on the high seas. They trade reciprocally with the Dominions. On the retail side, fine buildings in every city contain not only groceries, butcheries and dairies, but also barber's and chemist's shops, cafes and restaurants, clothing, footwear, hardware, furnishing and optical departments. I ought to add, however, that most co-operative societies are located, not in cities, but in places too small to carry anything more ambitious than ordinary shops or village stores.

Co-operative shop windows reflect the movement's working class character. Even the semi-luxuries bought by quite modest middle class folks are still the exception, not the rule. Personnel of retail societies' management committees is mainly of the artisan or clerk type. Even C.W.S. directorships—"plum" jobs starting at £750 a year!—are never offered to men in private trade; they go only to those who have been all through the co-operative mill.

Socially the most significant result of the societies' working class origin is that they have always led other traders in the matter of labor conditions. Every one of the 350,000 British co-operative employees is a trade unionist.

And the future? I think the movement, like other institutions, may tend toward centralization, though very slowly because of its intense individualism. Already the C.W.S. has taken over certain retail societies that could not pay their way; while the Scottish C.W.S. has opened retail stores in remote areas. I

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SUPERIOR QUALITY
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Always is good flour. Pays no attention to ups and downs and this and that.
Just always GOOD FLOUR
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A Kansas Turkey Wheat Flour
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GENUINE
GLUTEN FLOUR
Guaranteed to comply in all respects to standard requirements of the U.S. Department of Agriculture
Manufactured by
The Farwell & Rhines Co.
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"RUSSELL'S BEST"
"AMERICAN SPECIAL"
Our mill is located in the high protein wheat district of central western Kansas, and secures most of its wheat directly from growers.
RUSSELL MILLING CO., Russell, Kansas

foresee groups of societies uniting to promote district federations for running on a regional basis enterprises like laundries, coal supply, funeral furnishing. I see them attracting more middle class people. I expect co-operative funds to go less and less into government securities and other outside investments, more and more into co-operative factories and primary sources of supply.

I believe the societies will do more business in future with farmers, buying from them (as many are already doing) livestock, crops and dairy produce, selling to them seeds, manures and domestic goods. Indeed, I think it likely the co-operative societies will play an ever-increasing part, not so much in British agriculture, as in the marketing of British farm produce.

But much depends on the future trend of legislation. The societies were scared by the pre-war tendency toward legal quotas which had the effect of stereotyping their share of any given business activity and setting a limit to their advance. They fear, too, the kindred idea (now being examined by a Board of Trade committee) of saving labor through pooled retail distribution. They have never asked for government favors and do not seek them now; but they would resent bitterly any state action that curtailed their freedom to expand in open competition with private traders. Further legislation having that effect would drive them wholeheartedly into political action. Their political outlook is characteristically British—"leave us alone, and don't interfere!"

——BREAD IS THE STAFF OF LIFE——

Wheat Crop Insurance Registers Increase in Eastern Kansas

Triple-A "all-risk" wheat crop insurance has taken a big jump in eastern Kansas, reports Lawrence Norton, chairman of the Kansas state AAA committee. He indicates that for the 1942 crop farmers in 43 eastern counties have taken out such protection guaranteeing them 75% of an average wheat crop on 43,482 farms. This compares with 30,094 farms in these counties in 1941.

Oddly enough, in a state that once included a substantial portion of the old dust bowl, it is rain and floods, not drouth and winds that have encouraged farmers to take out more wheat crop insurance. During 1941 the insured farmers in this area, which includes all counties east of the west line of Washington and Cowley, collected 1,801,553 bus of wheat as indemnity payments on their policies. Most of these loss payments went to producers whose crops suffered from excessive rains, floods, or wheat ailments like rust that go with a wet season.

"Growers in eastern Kansas have thought of wheat as a pretty sure crop," comments Mr. Norton, "but 1941 has proved to them that widespread losses can occur. Because failures are seldom in this area, premium rates are low, averaging about one bushel per acre for the 75% coverage. By investing a little wheat in crop insurance each year, the grower can protect himself against the losses that are certain to come some day."

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KING'S BEST
GOLD MINE
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Vitamin B_1, B_2 (G) Riboflavin, and others. These are the vitamins made by nature—not drugs—and stored up in the wheat germ which is milled right into the flour.
And another important thing—the bread, rolls, etc., really taste good.
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GREAT BEND, KANSAS

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Canada Postpones Vitamin-Rich Flour and Bread Until April

VANCOUVER, B. C.—The Dominion's new vitamin-rich bread scheduled to have gone on the market here on Feb. 1 has been delayed until April 15, the Vancouver Master Bakers Association has been notified from Ottawa.

In addition western mill representatives have been advised that the two new types of flour will not be available until April 1. The delay is understood to have been due to difficulties in making changes in milling equipment.

The new types of flour are to be known as vitamin B white flour (Canada approved) and vitamin B flour (Canada approved), the latter a brown grind with bread made from both types.

The bakers here have been advised that as soon as the new bread goes on sale it will not be permissible to use the word "vitamin" or any other "word, symbol, or device" suggestive of any vitamin in connection with the bread.

However, coast bakers are in a quandary about the new product. Under the instructions which they have received from the baking controller, the new bread formula must contain not less than 4% of the weight of the flour in powdered milk. Now the supplies of this powdered milk here are very small and some bakers report being able to secure only very small quantities while others cannot get any at all.

This situation appears to call for government action along one of several lines. Either the powdered milk must be made available, or a smaller percentage of the powdered milk must be permitted. In view of this situation it is quite possible that a further delay in the new bread date may result.

However, the general feeling among the bakery trade in the city is that there will be a very strong popular demand for the new vitamin-rich bread and that present sales will be sharply increased, especially if the government undertakes an extensive advertising campaign outlining the merits of the new type of loaf.

Vancouver bakers have been looking forward for some weeks to a visit here of Will H. Harrison, of Harrison Bros., Montreal, the new Canadian baking controller. Extensive plans were made for conferences with him. He was expected on the coast the end of January but word was received from his Ottawa headquarters during the week that his trip had to be postponed due to pressure of business. Present indications are that Mr. Harrison will not get out here until some time in March.

WESTERN FARMERS AWAIT RESULTS OF OTTAWA TRIP

WINNIPEG, MAN.—The delegation of more than 400 western farmers and business men to Ottawa has returned home to await announcement of the Dominion government's wheat policy for 1942. They received no definite answer to their requests, except that their proposals would go before the federal cabinet as they were submitted.

Private reports from Ottawa indicate that the producer will receive a higher initial price for his wheat this year, with the majority forecasting a price of 90c bu for No. 1 northern in store at Fort William, Port Arthur and Vancouver. The western farm delegation urged a price of $1. However, reliable reports indicate that if the latter price were decided upon it would almost certainly be accompanied with a reduction in payments to prairie producers under other assistance programs.

——BREAD IS THE STAFF OF LIFE——

WHEAT, FLOUR EXPORTS UP

WINNIPEG, MAN.—Total exports of Canadian wheat and flour to oversea destinations combined with United States imports for the initial five months of the current crop year (August-December) amounted to 86,893,135 bus. This is the largest total for any comparative period in any of the preceding four crop years.

THATCHER WHEAT LEADS ALL CANADIAN VARIETIES

WINNIPEG, MAN.—Thatcher wheat has still further increased its lead as the dominant wheat variety in Canada, according to the annual survey of the research department of the Searle Grain Co.

The survey reveals that Thatcher wheat now occupies 44.9% of the acreage sown to wheat in the three prairies provinces, compared with 41% in 1940. Marquis is in second place with 24.5% of the acreage occupied, compared with 27% in 1940. Third place is now taken by Red Bobs occupying 13.5% in 1941, compared with 14% the year previous. Renown in 1941 was sown on 4.6% of the acreage, Apex on 4%, Regent on 2.5%, Reward on 2.2%, Durum on 1.6% and Garnet on 1.1% only. Other varieties occupy 1.1% of the acreage.

Thatcher greatly dominates in Manitoba and Saskatchewan, occupying just over 60% of the acreage, but in Alberta Red Bobs comes first, being sown on 42.1% of the acreage, closely followed, however, by Marquis which was sown on 39.1% of the acreage in wheat.

——BREAD IS THE STAFF OF LIFE——

ONTARIO BAKERS TO MEET IN TORONTO IN FEBRUARY

TORONTO, ONT.—The convention of Ontario bakers which was originally scheduled for January is to be held here in February. Dates will be announced later.

Final arrangements for what promises to be one of the most important conventions ever held in Ontario are now being completed. Round table discussions of problems affecting the industry will be favored rather than formal speeches.

Guests will include J. Gordon Taggart, co-ordinator of food administrators; W. H. Harrison, bakery administrator; G. Cecil Morrison, president of the National Council of the Baking Industry, and P. Sparks, industrial relations counsel of the National Council.

——BREAD IS THE STAFF OF LIFE——

'41 WHEAT CROP IN CANADA

WINNIPEG, MAN.—Western Canada's 1941 wheat crop totaled 270,899,000 bus, according to the latest estimate of the Searle Grain Co. The total compares with 525,000,000 bus harvested in 1940. The Alberta crop is placed at 90,916,000 bus, Saskatchewan's at 125,471,000, and Manitoba's at 54,512,000 bus.

CANADA'S OUTPUT OF FLOUR IN DECEMBER SET AT 1,577,169 BBLS

TORONTO, ONT.—The bureau of statistics at Ottawa reports total milling capacity employed in Canada during the month of December as 89,818 bbls. Amount of wheat ground was 7,079,870 bus, against 4,879,336 bus in December, 1940.

Flour production in December, 1941, amounted to 1,577,169 bbls, against 1,076,132 bbls in December, 1940. Exports of flour were 930,236 bbls in December, 1941, compared with 345,611 bbls in the same month of previous year.

Production of Ontario winter wheat flour in December was 68,187 bbls against 89,344 a year ago. Low grade flour produced last December amounted to 35,494 bbls and feed flour 9,762 bbls. The output of bran was 22,753 tons, shorts 23,390 tons and middlings 12,209 tons.

Flour production in the calendar year of 1941 reached 18,894,178 bbls, against 16,254,921 in 1940. Percentage of flour production to capacity in operation was 71.5 in December, 1941, as against 79.4 in November. The biggest month of the year so far has been August with a production percentage of 82.3.

Consumption of oats, barley and buckwheat by mills in the same month was higher than a year ago.

——BREAD IS THE STAFF OF LIFE——

ROBERT M. BRYAN JOINS WARTIME PRICES BOARD

VANCOUVER, B. C.—Robert M. Bryan, of Hall Bryan, Ltd., has joined the British Columbia regional office of the Wartime Prices and Trade Board here as director of the feed administration. Since early in December Mr. Bryan, who is president of the Vancouver Grain Exchange and a past president of the Vancouver Merchants Exchange, has been serving as administrator of the Agricultural Supply Board in connection with feed grains.

In his new capacity Mr. Bryan will handle feed problems arising out of the price ceiling regulations. He has served 25 years in the grain and milling business in Western Canada.

——BREAD IS THE STAFF OF LIFE——

FERTILIZER SITUATION SURVEYED

WINNIPEG, MAN.—Reports from Ottawa indicate that department of agriculture officials have made a canvass of the amount of fertilizers available and it is estimated that a large part of eastern and central Canada could be supplied. It is understood that the government will set aside $1,000,000 to meet transportation costs of moving the fertilizers from the plant to the farms. In addition the government has advised farmers that chemicals and chemical products to control insects and diseases of the field crops and livestock are getting scarce. They advise farmers they should buy what they need early this year.

MILLING SITUATION REPORTED TIGHT IN EASTERN CANADA

Observers Blame Price Ceiling Situation, Scarcity of Winter Wheat and Poor Demand for Flour From Country Mills—Flour Ceiling Too Low, Trade Complains

TORONTO, ONT.—The milling situation in Ontario and eastern provinces has tightened up again. Feed is scarce in a number of sections. Reasons assigned by the trade for this state of affairs are poor demand for flour from country mills, scarcity of winter wheat and the price ceiling situation.

As the effect of the ceiling begins to manifest itself, the trade complains of a relatively high cost of winter wheat over against a low top for flour. The latter was selling at low rices during the period of last fall when the ceiling basis was fixed. This now prevents mills from getting a price for flour and feed which would justify the current ceiling for wheat, according to trade opinion.

The fundamental fault in this ceiling policy, observers say, is that it was conceived in a wrong way and did not take into account the long-term conditions under which any such ceiling must operate. It may be possible by forcing flour mills to do business at a loss to hide the real effect of a ceiling on wheat, flour and feed which is not based on common sense and economic justice, they comment, but such a state of affairs cannot last.

ONTARIO WINTER WHEAT ACREAGE ESTIMATED AT 25 TO 50% ABOVE 1941

TORONTO, ONT.—Reliable reports from milling origins in Ontario place the acreage under winter wheat for the 1942 harvest in this province at 25 to 50% over that of last year. As the crop of 1941 amounted to over 16,000,000 bus, an increase of this kind should give the milling industry a good deal more wheat to deal with than is available from the 1941 crop.

Many mills now are having difficulty in getting enough winter wheat to take care of their minimum needs. In some parts, the shortage is such that local mills have taken to blending western springs with their winter wheat in order to keep going. This does not yield as good flour for pastry and biscuits but it does serve the purpose in many cases and has the merit of being cheaper.

The shortage of winters now so generally reported by country mills is not really due to exhaustion of stocks in hands of farmers but is a result of increased demand for all kinds of feed from grains of local growth. Country millers say they have been trying to persuade farmers to trade winter wheat for springs at a bonus of 20@25c bu to the farmer, but have not been able to get this proposal accepted to any extent. Farmers say they are afraid of western weed seeds in the substituted grain.

—BREAD IS THE STAFF OF LIFE—

HIGHER BAG COSTS CUT CANADIAN MILL EARNINGS

TORONTO, ONT.—Among other factors making for the present unprofitable operation of flour mills in this part of Canada is the higher cost of bags, according to trade observers. The increase is entirely justified so far as the bag factories are concerned, but it does add to the difficulties of flour mills. They did not anticipate any of their present higher cost of a number of things when the test period for ceiling prices on flour came upon them. Had they been able to foresee at that time the situation of today they would have provided for it.

Cost of bags is only one of several factors which are now adversely affecting mill earnings. Another 30c bbl would hardly redress the balance and put prices where they should be, according to the trade.

—BREAD IS THE STAFF OF LIFE—

FEED RELIEF PROGRAM

WINNIPEG, MAN.—The Saskatchewan government has completed an arrangement whereby farmers in the crop failure areas of that province will be assisted in obtaining feed for their livestock. Premier W. J. Patterson announced last week that under the plan the railways will absorb one third of the cost of freight, the government will pay one third and the individual farmer will pay one third. No accurate estimate of the cost to the government was available, the premier said.

—BREAD IS THE STAFF OF LIFE—

CATELLI REPORTS PROFITS

TORONTO, ONT.—The Catelli Food Products, Ltd., Toronto, manufacturers of macaroni, spaghetti, etc., have issued their financial report for the fiscal year ending with Nov. 29, 1941, showing a decline in net profits as compared with previous year which is attributed to curtailment of export trade. After all charges net profit was $34,237, equal to 89c a share on the 75c preferred stock, while the balance after regular preferred dividends, amounted to 12c a share on the common stock, compared with $1.96 in the previous year. The decrease in net profit from that of preceding year is given at $57,755. The balance of earned surplus carried forward was $160,116, against $202,032 at the end of 1940.

—BREAD IS THE STAFF OF LIFE—

BAKERS, ALLIED TRADESMEN WILL MEET IN TORONTO

TORONTO, ONT.—The Allied Trades of the Baking Industry (Canada), Inc., is to hold its annual meeting at the Granite Club here on Feb. 16. A dinner will be followed by discussion of the past year's business and election of an executive for the ensuing year.

This meeting is being held the night previous to the Ontario Bakers Association convention which commences on Feb. 17 and lasts for two days. The latter event is to be held at the Royal York Hotel and invitations have been extended to members of the allied trades.

—BREAD IS THE STAFF OF LIFE—

CANADA'S WHEAT EXPORTS UP

TORONTO, ONT.—Total shipments of wheat for export from Canada during this crop year to the end of January amounted to 74,523,459 bus, as against 50,683,600 bus a year ago.

—BREAD IS THE STAFF OF LIFE—

CORN CEILING SET

WINNIPEG, MAN.—The Canadian Wheat Board, acting as administrator on behalf of the Wartime Prices and Trades Board, has defined the maximum price during the basic period Sept. 15 to Oct. 11, 1941, of yellow corn 15% moisture as $1.20 bu, delivered Montreal. This means that the maximum price at shipping points in Ontario and western Canada will be $1.20 bu, less the domestic rail freight charges to Montreal. For hybrid white corn a premium up to 10c bu over yellow corn may be paid. The board also defined the maximum price during the basic period of No. 1 feed screenings as $21.50 ton, and refuse screenings as $13.50 ton, f.o.b. Fort William and Port Arthur or any point in the prairie provinces.

—BREAD IS THE STAFF OF LIFE—

CANADIAN CROP VALUE DOWN

TORONTO, ONT.—The gross value of all field crops produced in Cannada in 1941 has been estimated by the Bureau of Statistics at $647,850,000, a decrease of $28,832,000 from the 1940 total. Wheat was the main factor in the reduction as the smaller production resulted in a lowering of the total value of wheat from $287,620,000 in 1940 to $160,953,000 in 1941. The average farm price of wheat in 1941 has been estimated at 53c bu, an increase of only 1c above that of 1940. In the case of other grains price increases have been much more substantial and yields were also better which compensated in part for the decline in wheat.

—BREAD IS THE STAFF OF LIFE—

RESEARCH FOR INDUSTRIAL USES OF WHEAT URGED

VANCOUVER, B. C.—Intensification of wartime research on development of industrial uses for Canada's wheat surplus was urged in the British Columbia legislature at Victoria during the week by Glen Braden, member from Peace River.

Synthetic rubber, alcohol and plastics were products which might be manufactured from wheat, Mr. Braden claimed, and said that Brazil had solved its coffee surplus by converting coffee into plastics.

The Brazilian loss of $50,000,000 annually has been converted into an asset, he said. "Wheat should soon be turned into thousands of articles."

Research is now under way seeking a method of converting wheat into synthetic rubber, the Liberal member told the legislature, and the wheat farmer may soon come into his own.

In Spring-like Weather

Export Flour Men at Vancouver Enjoy Golf With Business Across Pacific Nonexistent

VANCOUVER, B. C.—The one bright spot remaining for export men here is that they are able to enjoy lots of golf in the fine springlike weather. This is about the only compensation they have these days for business across the Pacific is nonexistent.

No export sales to speak of have been reported out of this port since the commencement of American-Japanese hostilities early in December. Even if any of the regular buyers on the other side of the Pacific were in a position to receive supplies, it is very doubtful if they could be accommodated because practically all the available tonnage on this coast has been requisitioned by the Navy. Ideas of the owners who have the few remaining available ships are much too high to enable Canadian mills to offer out on any hope of acceptance.

The position with regard to Canadian flour shipments stranded at foreign ports around the Pacific is understood to be unchanged. In the meantime the custodian of enemy property here has ordered the release of 12,000 bbls of American flour lying on docks here and discharged after the ship was turned back from the war zone.

Even with this permission little has been done to dispose of the flour. It is estimated that about 50% is soft wheat flour which might be disposed of to the local trade, but the remainder is made up of blends and could not be sold locally. Some flour men are suggesting that it be returned to the shipper for transfer to some other export destination.

CANADA EXPORTS WHEAT TO SWITZERLAND

Export business totalled only about 750,000 bus and included almost 500,000 bus of No. 2 Northern for shipment from a United States port to Switzerland. The remainder was reported worked to the United Kingdom. Reports that a cargo of Canadian wheat had been sold to a Central or South American country could not be confirmed.

WHEAT, FLOUR EXPORTS BY CANADA INCREASE OVER PREVIOUS YEAR

TORONTO, ONT.—The Dominion Bureau of Statistics reports export clearances of wheat and wheat flour in the five months of crop year ending with December at 86,300,000 bus, compared with 54,700,000 bus in the corresponding five months of previous year.

For so far in this crop year overseas clearances of wheat alone are running 1,000,000 bus weekly in excess of 1940-41. The wheat flour movement is about one third greater than at this time last year and imports of Canadian wheat into the United States also show improvement.

Stocks of wheat, however, are still reported very large, the visible supply totaling 498,000,000 bus, but deliveries from farmers in the last half of the season are expected to be small.

In mid-January the bureau estimated the amount of wheat on prairie farms available for delivery or carry-over at 64,538,101 bus this year, as against 172,897,898 bus in 1940-41. The bureau predicts that marketings over the last 28 weeks of the current crop year should not exceed an average of 2,300,000 bus weekly, compared with an average of 6,400,000 bus in the first 24 weeks.

—BREAD IS THE STAFF OF LIFE—

DOUGLAS LORN CAMERON DIES AT COWICHAN BAY

VANCOUVER, B. C.—Douglas Lorn Cameron, prominent in western Canadian business circles for many years and previous to his retirement several years ago due to persistent ill health, a director of both the Maple Leaf Milling Co., Ltd., and Canadian Bakeries, Ltd., died at his Cowichan Bay residence near here last week. He was 54 years old and was the son of the late Sir Douglas Cameron, K.C.M.G., former lieutenant-governor of Manitoba. His wife is the daughter of the late Sir Augustus Nanton and Lady Nanton, of Winnipeg.

Mr. Cameron served oversea during the first World War with the 27th Battalion and the 3rd Battery C.F.A.

—BREAD IS THE STAFF OF LIFE—

GRAIN FOR FEED

WINNIPEG, MAN.—It has been brought to the attention of the Canadian Wheat Board, in its capacity as administrator for the Wartime Prices and Trades Board, that there are certain districts in the prairie provinces where it is necessary to ship in grain for feed, due to the fact that there are not sufficient quantities of feed available locally. In such cases, the board says, it will be permissible to move grain for feeding purposes from any point in the West to areas where feed is required. It will be in order to add to the price at the point of shipment the cost of freight and the other usual handling charges, even though this may bring the selling price above the ceiling at point of destination. The price at point of shipment, however, shall not be above the ceiling price.

—BREAD IS THE STAFF OF LIFE—

CANADIAN RESTRICTION ANNOUNCED

WINNIPEG, MAN.—An order restricting use of Manila fibre and rope and reducing production of all hard-fibre rope and twine, except binder twine, was announced at Ottawa last week by the department of munitions and supply.

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"Very Best"
Quality Flours
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Manufacturers of High-Grade Hard Wheat Flour
Foreign and Domestic Trade Solicited
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Operating Mills in Kansas and Missouri
BAKERY FLOUR - CRACKER FLOUR
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Manufacturers of Pure High-Grade Winter Wheat Flour
Brands: Lebanon Bell, Flake White, Fluffy Ruffles — LEBANON, ILL.
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The Williams Bros. Co.
Merchant Millers KENT, OHIO, U. S. A.
Specialists Ohio Winter Wheat Flour
All our wheat is grown on "Western Reserve" and bought from the growers at elevators we own and operate.

HARDESTY MILLING CO.
Quality Millers *for*
Over Half a Century
Domestic and Export DOVER, OHIO

Some Confusing Aspects of a War Problem

By HARVEY E. YANTIS
In FEEDSTUFFS

AMONG the minor worries we have given consideration to this week has been the horse and mule situation. It wouldn't have been thought of at all, of course, if Uncle Sam hadn't decided to take away our tires and motor vehicles for the duration. We were not alone in our pondering, for the daily newspaper writers, columnists and cartoonists had a field day for themselves on the possibility of a motorized nation returning to the horse and buggy.

Being a country boy, we have always liked horses—and buggies and mules, too, for that matter. A mule has a lot of personality, and a lot of sense, although we think we would rather have a team of lively bays for driving to the office and paying social calls.

From our youth in Missouri we remember an old farmer named Ratti (pronounced rat eye) who always drove the sorriest looking span of brown mules any one ever saw. Chided about their appearance one day, he replied: "Them mules ain't very good looking. Neither is my old woman. But all three of 'em are doggone hard workers, and I can trust 'em."

The two horses for whom our memory will be ever green were named Snowball and Drachma. Snowball was a racehorse, a beautiful Arabian. He was owned by our family. Ye editor as a skinny 12-year-old was given the privilege of exercising him occasionally, and loved him dearly. The night we saw him burn up in a stable fire was an experience from which we did not think we would ever be able to recover.

Drachma was a big sorrel who kicked us clear out of a stable door into a manure pile when we were currying him one day. It was one of the clearest and most lasting lessons we ever learned.

But what we started out to say was that the reading on the current horse, mule and buggy situation is very confusing. There seem to be all sorts of opinions from supposed experts as to whether a fellow can buy a horse in these days and, if so, how much it will cost to get one and keep it.

Take Wayne Dinsmore, for example. He is the secretary of the Horse and Mule Association of America, and should know what he is talking about. He is quoted as saying that there are more than 14,000,000 head in this country now, and that this would be sufficient to meet the nation's needs. The bottleneck is in horse drawn vehicles, he says, because there are only a few firms making them. But a widely circulated press story from New York gives different information, to the effect that there are not enough horses to place a team on every farm, let alone to fill city needs. Even the army has only 25,000 cavalry horses and 12,000 draft horses, this writer says. He agrees about the lack of vehicles, however, and states that only 900 buggies were sold in the United States last year. Furthermore, he brings out the fact that there is a shortage of buggy whips. Later in his article it becomes obvious that this is an understatement, for it turns out that there are no buggy whips at all, and none is being manufactured.

In still another dispatch, Ferd Owens, described as a veteran horse and mule commission man in Kansas City, is quoted as being in substantial agreement with Mr. Dinsmore concerning the supply of animals, but is of a sharply divergent opinion in regard to costs. He says that a good 5-year-old team of horses can be had for $150, and a first-class span of mules for $300. Mr. Dinsmore, on the other hand, says that a pair of good farm chunks, standing about 15½ hands high and weighing around 1,500 lbs each, will bring close to $300, and that big, choice draft horses are worth $600 a pair. A pair of good mules will bring $350@400, according to this authority. We have been working out a plan to buy our stock from Mr. Owens and sell it to Mr. Dinsmore.

The two gentlemen do not see eye to eye on the cost of maintaining a horse, either. Mr. Dinsmore thinks it can be done cheaply, and Mr. Owens doesn't. The former says that you can feed, bed and shoe a horse for 50c a day. Mr. Owens says it can't be done, and he points out that prairie hay is $13 a ton, up $4 from a year ago; alfalfa hay is $21 a ton, up $3, and oats cost 54c a bushel, 15c more than a year ago. Wheat straw, used to bed horses down, costs $12 a ton, $10.50 more than a couple of years ago.

From all this, we don't know exactly where we are at. We would rather have a horse, but before we decide what we are going to do we are going to survey the bicycle situation.

"DURAMBER"
SEMOLINA
FANCY No. 1
Milled from Carefully Selected
AMBER DURUM WHEAT
AMBER MILLING CO.
Chamber of Commerce - MINNEAPOLIS
Cable Address: "AMBERMILCO"

ROYAL FLUFF-EAT-A
It pays to pick the right cake flour! Average flours really cost more than top quality flours like ROYAL FLUFF-EAT-A, which produces more finished cake per pound of flour. You get a richer, moister, longer-keeping cake with ROYAL FLUFF-EAT-A.
VOIGT MILLING CO.
Grand Rapids, Mich. Telephone 85991

Red River Milling Company
FERGUS FALLS, MINNESOTA
Montana and North Dakota Wheat used exclusively
Daily Capacity, 1,000 Barrels
"CERES" Highest Quality Hard Spring Wheat Flour
"No. A1" Highest Quality Hard Spring Wheat Flour
DISTRICT SALES OFFICE:
510 Hodgson Building, MINNEAPOLIS

Bowersock Mills & Power Co.
LAWRENCE, KANSAS
ZEPHYR FLOUR
AS FINE A BAKING FLOUR AS A BAKER CAN BUY AT ANY PRICE
Established 1874 — 1,500 BARRELS DAILY

FARGO MILL COMPANY
Millers of Hard Spring Wheat Flour made from the famous Red River Valley Wheat.
FARGO, N. D.

I-H
QUALITY MILLED FLOURS
Ismert-Hincke Milling Co.
Kansas City, Mo.

New Mill Completed 1936
"SLOGAN"
A Modernized Flour for the Baker
CANADIAN MILL & ELEVATOR CO.
El Reno, Okla.

MERIDIAN FLOUR
NEWTON MILLING & ELEVATOR CO.
Newton, Kansas
Sales Office—Board of Trade Bldg., KANSAS CITY, MO.

Buy and Sell Through
WANT ADS
... in ...
THE NORTHWESTERN MILLER

—BREAD IS THE STAFF OF LIFE—

U.S.D.A. Will Aid in Saving Russia's Grain Varieties

The United States government has offered to aid in rescuing from destruction Russia's important grain varieties, to keep them alive for the time when "scorched earth" can spring up green again.

Responding to a suggestion by Sir John Russell, of the Rothamsted Experimental Station in England, who feels that the need is urgent, the Department of Agriculture stands ready to receive and plant special Russian grains in United States areas suited to them, or to aid in any other way practicable.

British scientists are expected to salvage Russia's important fruit tree varieties. Very little material is needed and it can be carried by air. British varieties of fruits would not be at all suitable, he emphasizes.

To lessen hunger and suffering, agricultural reconstruction will be tremendously important in fought-over areas, deliberately burned by Russian peasants to prevent enemy use. Russian plant breeders have successfully produced many varieties of crops suited to specific regions, particularly drouth-resistant varieties. Years of labor would be lost if seed for future planting is not saved from the chaos of war.

Better Wheat

(Continued from page 7.)

these had made it easier to meet the rigid requirements than it had been to meet lax requirements in earlier days.

Just to show you the quality that fields and threshed samples must meet, let me

read you the quality wheat standards for 1940:

1. Fields must be above the average of the community in stand, uniformity and vigor, and must be fields that would be considered good seed wheat sources.
2. Fields to be eligible for premium must be of soft red winter wheat varieties adapted to the Wheat Improvement Area and recommended by the Purdue University Agricultural Experiment Station.
3. 98.5% of the heads in this field must be of one variety.
4. Must show no bunt or stinking smut; less than 5% of plants showing loose smut; not enough scab to injure quality of threshed grain.
5. a. Must be entirely free from wild garlic and wild onion.
   b. Must be entirely free of rye, vetch, and other field crops.
   c. Must not have more than a total of 32 noxious weeds, such as cheat or cockle, per acre.
6. The delivered grain must have a test weight of 58.5 lbs per bushel or better. It must be relatively free of weed seeds, foreign material, and must not show serious damage from moisture, heat or weevil.
7. The final date for receiving premium wheat by millers was to be Dec. 1, 1940.

It would be safe to say that there were not over 10 fields in the area that would have met these rigid requirements back in 1932 when we started the premium move. Last year in six counties we had 87 growers with 90,840 estimated bushels.

At first the funds in the fellowship provided the inspection service free of charge. But we found that there was a tendency on the part of a few people to abuse this privilege by making application for acres that had no chance of passing, because, as they said, it didn't cost anything. This we took care of by requiring a fee of 5c per acre which kept the offenders out.

This to my knowledge is the first case on record where a grain buyer or processor offered a reward to growers for carrying out practices that were even more beneficial to the farmer than they were to the miller himself. As one of my good farmer friends put it, "he was getting paid for doing the things he should have been doing anyway."

Just before each harvest season an invitation to join the move is sent to all grain buyers of the area. The name of each company that agrees to pay the premium is published in the papers and sent to each farmer having premium wheat. Each buyer is furnished a list of the names of growers meeting the field inspection which included the estimated yield. During the eight years that this plan has been in operation we have never had a single case of any buyer who ever refused to take any eligible wheat at the agreed premium.

This is not a new technique in the field of advertising, but I believe it is new in its application to crop improvement work. The point which we tried particularly hard to emphasize at all times was that this was a mutual problem of all concerned and that the farmers had even more at stake than the mills.

It wasn't very long before seed wheat began to move freely, for many of the growers found that instead of getting 3c bu premium they could get 10 to 25c for their grain when sold as seed. Particularly was this so when their fields had been declared premium fields and publicized as such. Thus much of the premium wheat is sold as seed, although some growers still prefer to sell it as commercial grain.

I hope you will not forget that this inspection of fields was supervised by Purdue, our agricultural university, and further that the standards which fields and samples must meet were set up by

(Continued on page 41.)

ARNOLD
...of...
STERLING
Mills and Sells
"Thoro-Bread"
(Diastatically Balanced)
A very fine, strong, altogether uniform and dependable flour
ARNOLD MILLING CO.
STERLING, KANSAS

ROBIN'S BEST FLOUR
The ROBINSON MILLING COMPANY
SALINA, KANSAS
ACCEPTED AMERICAN MEDICAL ASSN

HIGH GLUTEN FLOURS
For Bakers
The Morrison Milling Co.
Denton, Texas
Emphatically Independent

FINGER LAKES AND HUDSON FLOUR MILLS, Inc.
Geneva, N. Y.
WHEAT FLOUR Mills At RYE FLOUR
GENEVA, N. Y. TROY, N. Y.

MINER-HILLARD MILLING CO.
WILKES-BARRE, PA.
Manufacturers of
Wheat, Rye, Corn and Buckwheat Flours

Why your Red Cross urgently needs

FIFTY MILLION DOLLARS, NOW

How the fund is allocated . . . What it does in service

Every dollar that you give now to your Red Cross marches into the thick of things where humanitarian help is needed most—up to the fronts and battle stations where the fighting is heaviest. Into the Red Cross hospitals and First Aid units where prompt medical attention and supplies may save innumerable lives. And throughout our broad land to train and equip volunteers to meet any emergency that may strike.

How the $50,000,000 War Fund is Used

SERVICE TO THE ARMED FORCES - - - - - $25,000,000
Provides for the care, welfare and morale of the Army and Navy, including services to men in hospitals and during convalescence. • Provides an important link between the service men and their families; keeps the families from breaking up, supplies food, shelter, medicine, and even jobs where necessary. • Provides essential medical and other supplies outside of standard Government equipment. • Operates Red Cross headquarters at camps and naval stations. • Enrolls blood donors and medical technologists for Army and Navy needs. • Provides millions of surgical dressings, sweaters, socks, etc., through volunteer workers.

DISASTER AND CIVILIAN EMERGENCY RELIEF - - $10,000,000
Supplies emergency needs for food, clothing, shelter and medical attention for disaster victims. • Assists stricken families in repair of homes and other adjustments; provides minimum reserves of essential relief supplies to prevent unnecessary delays.

CIVILIAN DEFENSE SERVICES - - - - - - - $5,000,000
Trains volunteers for home nursing and nurses' aides. • Trains nurses, men and women, for active duty with the Army and Navy. • Trains volunteers in First Aid and accident prevention. • Trains volunteers for work in Motor Corps, Canteen and Production. • Instructs men, women and children in preparedness against explosive and incendiary bombs. • Organizes for evacuation of children and their families from stricken areas. • Assists Red Cross Chapters in establishing effective co-ordination of emergency relief with local and State defense authorities.

SERVICE AND ASSISTANCE THROUGH CHAPTERS - $4,000,000
Gives assistance and service to the 3,740 Red Cross Chapters with their 6,131 Branches responsible for local Red Cross activities, particularly welfare work among the service men and their families.

OTHER ACTIVITIES AND CONTINGENCIES - - - $6,000,000
Provides for unforeseen expansions in program and for new activities made necessary by unexpected developments.

TOTAL - - - - - - - - - - - - - - $50,000,000

THE AMERICAN RED CROSS $50,000,000 WAR FUND

Note to Red Cross Canvassers: Use this material to better inform contributors how their donations are being expended.

Stuffed Straights

FROM THE MANAGING EDITOR'S SIFTER

By Carroll K. Michener

A MILLING REVOLUTION THAT DIED A-BORNING.—There's nothing very new about the Rural Electrification Administration's "coffee-grinder" home-milling notion. It has been a perennial, in some form or other and in some place or other, for many years. Western Canada had an epidemic of it not so long ago, and William C. Edgar, one time editor of THE NORTHESTERN MILLER, wrote whimsically of an encounter with a revolutionary home-milling gadget in far-off Russia, 50 years ago, while he was engaged in distributing famine-relief flour. The tale ran thus:

"One afternoon for two hours, I was favored with the presence of a gentleman who had just perfected one of those 'world-beaters' in the line of milling machinery, of which we occasionally hear in America. This person, who, I fear, was just a trifle off in his top story, insisted that he must see me, as he had an invention destined to 'revolutionize the entire system of flour making.' Inwardly marveling that, even in this remote corner of the world, one could not escape the man who had a scheme, and wondering if, from distant Moscow, the final revolution in milling machinery was destined to appear on the milling horizon and paralyze the depleted pocketbook of the long-suffering miller, I gave orders to admit the inventor, and mentally yearned for a Homer Baldwin to grapple with the intricacies of the mechanical problem about to be presented for my consideration. In a few minutes man and machine made their appearance. The former was a rather lean individual, with a nervous frame and a piercing, restless eye, which seemed to me to indicate latent insanity. His invention he bore under his arm, and it was carefully wrapped in folds of hieroglyphically printed Russian newspapers.

"As my visitor could not speak English, the services of an interpreter were necessary, and so I summoned one Alexsay Michaelovitch Orloff, who mangled our language for the edification and instruction of the guests of the Salviensky Bazar, as my hotel was called, and who is, in his way, the most curious and interesting study in Moscow. Mr. Orloff, whose knowledge of English, limited at best, became absolutely nil when confronted with the problems of translating technical terms from Russian into English, bowed himself into the room, and, with his customary, 'Please, please, sir, I will to you make plain,' prepared to give my caller's words his most distinguished consideration, disposing of himself in an attitude expressive of the profoundest attention.

"Meantime, the inventor began to unwind the papers from the thing he carried, and, as I marked the care with which he did so, and the eye which he cast restlessly about the room, vague old yarns about nihilists and bombs began to come into my head. As the machine emerged from its wrappings and stood revealed upon the table, the supposition that it was of infernal nature was strengthened, and I hesitated a moment before asking questions, lest I should precipitate an explosion. Upon closer examination, however, I found that the machine was merely a meat chopper, made in Philadelphia, being so marked in iron letters on its side. Originally, my visitor admitted, it had been used for 'the making of cotelettes,' but he claimed that he had so improved upon it that it now answered all the requirements of the process which he had invented. It appeared from the claims of its creator that it was not only a revolutionist in mill machinery, but that it was more radical by far in its future power, and would sweep the whole milling trade out of existence, for, by its use, wheat was to be made direct into bread, and every man was to become his own miller, thus doing away with one of the most grasping and unscrupulous elements in the economy of modern life.

"Trembling for the future of THE NORTHWESTERN MILLER'S subscription list, I asked for more light on his novel and highly interesting method, and thereby opened the flood-gates for an eloquent burst of Russian, which, accompanied by violent gesticulation, continued for upwards of half an hour.

"I made out that the wheat was first thoroughly soaked and made into a pulpy compound. Into the funnel of the machine it was then fed; the rollers rolled, the knives cut, the mass was pushed through perforated plates and emerged as a dough, ready for baking. My visitor stated that his invention was being successfully used in a place remote from Moscow, where, of course, it could not readily be seen, but he was certain it could be introduced in America with great profit to all concerned. As I was unable to give him a satisfactory guarantee that this could be done, but inclined positively to the belief that its only possible field would be found in Russia, he gathered it up, and tenderly wrapping it in its original form, regretfully and disappointedly withdrew, showing in every move and expression that he felt himself in the identical position of the person who cast pearls before swine."

▪ ▪ ▪

. . . Dr. Victor G. Heiser, the tough and impregnably-opinionated author-hero of "An American Doctor's Odyssey," is another self-set up nutritionist who seemingly has not yet heard of enriched white bread. Writing for the Industrial Press Service, which provides free-gratis "boiler plate" to the nation's editors for the National Association of Manufacturers so that "the industrial viewpoint on issues and problems of current interest may be made known," Dr. Heiser names "whole wheat or soybean bread" as No. 5 in the quintet of food groups essential to good nutrition. . . . Are we to understand, too, that the National Association of Manufacturers also is of this opinion? If so, a certain very highly placed flour miller who is one of the association's regional vice presidents probably is not going to be much pleased.

Contributors' Corner

Bill Specht is back in uniform again, and in his old outfit at Camp Blanding, Fla., but this time he's in the staff section and doesn't have to ride the motorcycle which wasn't there to ride during his first hitch. He's a veteran now—an old soldier—and doubtless is headed for some kind of command.

Maybe some of you will remember the story we told about some of Bill's peacetime war adventures in the Oct. 29 issue of THE NORTHWESTERN MILLER. That was during his first hitch as a member of the great draft army of the U. S. They sent

William Specht

him home soon afterward, full of laurels and other miscellaneous things, because he was over the pre-Pearl Harbor age limit, but now they need him again.

Bill had sort of an idea this would happen, so when he laid aside his uniform he put it where he could quickly slip into it again, and didn't bother to report for duty in his own little business outfit, the Chartres News Bureau in New Orleans, which for some years has admirably served THE NORTHWESTERN MILLER and its associated publications, THE AMERICAN BAKER, FEEDSTUFFS and MILLING PRODUCTION.

Born in New Orleans 34 years ago, William Specht's parents hoped he would grow up to be a musician. His mother was the prize winning pianist of the World's Columbian Exposition in Chicago and his father a violinist whose work ranged from burlesque to symphony, "depending upon the economic conditions of the season." But Bill had "ink in his stomach," as the Chinese put it, and went in for journalism. When the war is over he expects to go right back at it.

Momentarily Bill's address is Hq. Co. 61st Inf. Brig. APO 31, Camp Blanding, Fla., but most any time he's likely to be in one of the eight A. E. F.'s.

▪ ▪ ▪

Yes, we know the trade definition of a "stuffed straight" flour, and that's one reason why we chose the name that heads up the general confusion and doubtful refinement of this page, but not until we heard a gentleman of our acquaintance defining stuffed straights, just the other day, as "cheap flours" going to "the low income groups," did we grasp fully all of the devastating and hitherto uncontemplated implications in our choice of the name as a column caption. Only thing that saved us from a complete editorial tailspin was his further stipulation that "stuffed straights" contain two or three times as much thiamin as the patent flours.

▪ ▪ ▪

Remember, in "Sergeant York" (the movie, we mean), when Senator (now Secretary) Cordell Hull asked the hero which flattering offer he was going to accept—whether he was going to take a lot of thousands of dollars for a testimonial for a breakfast food, for example—and the brave sergeant, in the noble guise of Gary Cooper, said no he'd never et any of it, and Mr. Hull said "that didn't seem to make any difference"? They were both good marksmen, warn't they, these lads from the Tennessee hills—they'd heered of testimonials and could hold to a dead center on that target.

▪ ▪ ▪

We like Welch's grape juice, but we do not like this sentence bumbled over the air the other night by a radio announcer: "Thousands of children have refused to eat bread until it was spread with grape juice jam." We think it is very much more likely that thousands of children have refused to eat Welch's grape juice jam without bread to spread it on. . . .

ABA TO OPEN WASHINGTON OFFICE IN CHARGE OF COUNSEL W. A. QUINLAN

The governors of the American Bakers Association have announced that, starting about Feb. 16, the office of the ABA's general counsel and secretary of public relations, William A. Quinlan, will be at Washington, D. C. Increased governmental problems and controls of all kinds, now accentuated by the war, have made the move advisable, according to the announcement.

Mr. Quinlan has been associated with the baking industry since September, 1933, when he was employed by the National Bakers Council, serving as secretary of the council's committee on compliance and interpretations and executive secretary of the national trade practice complaints committee. In 1935, following dissolution of the council and NRA, he was employed by the American Bakers Association, serving as secretary of the Committee on Public, Industrial and Trade Relations,—more recently the Committee on Public Relations. Since January, 1937, he has also handled legal matters for the association, and was appointed general counsel in January, 1939. He has been editor of the ABA Monthly Bulletin since its first publication in February, 1936, and is a member of the staff conference board for the American Bakers Association and American Institute of Baking.

William A. Quinlan

. . Mr. Quinlan goes to Washington . .

Mr. Quinlan is a graduate of Crane College, the University of Chicago, and the University of Chicago Law School,—where he was the first editor-in-chief of the University of Chicago Law Review,—a member of the Illinois bar, the American Bar Association, the Chicago Bar Association, Phi Delta Phi and Sigma Chi, and a director of the National Council of Private Motor Truck Owners.

The office of ABA's general counsel and secretary of public relations will be at 1317 F Street N.W., Washington, D. C.

——BREAD IS THE STAFF OF LIFE——

GEORGE H. BUFORD JOINS KANSAS FLOUR MILLS CO.

KANSAS CITY, MO.—George H. Buford, for the last several years advertising and production counsellor for many bakeries in the Southwest, has joined the sales staff of Kansas Flour Mills Co., Kansas City, covering chiefly the Missouri and Iowa territory.

Starting in the milling business as a cereal chemist, Mr. Buford for several years worked for Globe Mills, Los Angeles, becoming a bakery service and specialty salesman for that company. The last few years he has been living in Kansas City, Kansas, doing his bakery advisory work. He is a member of the American Society of Bakery Engineers.

——BREAD IS THE STAFF OF LIFE——

SENATE COMMITTEE REPORTS BILL TO PROHIBIT FARM SALES BELOW SET PARITY

WASHINGTON, D. C.—The Senate agricultural committee on Feb. 10 unanimously voted to report the bill prohibiting sale of agricultural products at less than parity prices.

On Feb. 9 Gerald P. Nye (R., N. D.) introduced a measure prohibiting executive agencies from taking any action which might hold prices of agricultural commodities below 110% of parity.

Senator Nye's resolution would forbid the sale of government held farm commodities if such action would effect a lowering of farm prices below the 110% mark.

Senator Nye stated in his resolution that there is "evidence of an intention" to prevent farm prices from reaching "parity of 110% thereof," by manipulative practices contrary to the purposes of legislation enacted by Congress.

Senator Nye's move also would prohibit farm officials from taking any action within the purpose of preventing commodity prices from reaching parity, in cases where that price point has not been reached.

Under the recently enacted price control act farm prices cannot be fixed at a point below 110% of parity, but no restriction was written into the measure to prohibit sales of government held wheat, cotton or other supplies which might result in putting a brake on farm prices.

The measure introduced by Senator Nye and the favorable report by the agricultural committee failed to create any marked stir in the trade, however, for it was felt that the bill is ear-marked for presidential veto.

——BREAD IS THE STAFF OF LIFE——

WEED CONTROL PROGRAM

WINNIPEG, MAN.—Hon. J. L. Campbell, Manitoba minister of agriculture, has announced a new weed control policy for the province to be carried out along three main lines. The weed problem in large sections of western Canada is serious. With the province and municipalities working together, a policy of definite control will be practiced along the following lines: chemical treatment of small patches; cultural practice, such as summer fallow, and quarantine of seriously infested fields.

——BREAD IS THE STAFF OF LIFE——

"LESS SUGAR" RECIPES POPULAR

The announcement of sugar rationing has brought many requests to Wheat Flour Institute for recipes requiring little sugar. The Foods and Nutrition Division of the institute is able to fill these requests from defense nutrition teachers and home makers with tested recipes for various types of bread and simple coffee cake.

SUNNY KANSAS

Any baker
who bakes it
will tell you
how beautifully it bakes

And we will show you how economical it is.

★ ★

The Wichita Flour Mills Co.

2,500 Barrels Capacity 1,000,000 Bushels Storage

WICHITA - - KANSAS

WE SUPPORT WHEAT FLOUR INSTITUTE

HIGH UTILITY PATENT

Country-Milled from Country-run Wheat located in the very center of the High Protein Turkey Wheat Country.
INDEPENDENT OWNER MANAGED

The WALL-ROGALSKY MILLING CO.
McPHERSON, KANSAS

J. F. IMBS MILLING CO. ST. LOUIS, MO.
Millers of Hard and Soft Wheat Flour
DAILY CAPACITY 2,100 BARRELS

Paul L. Cornell

. . . no flash in the pan . . .

The enriched bread campaign is no flash in the pan, Paul L. Cornell, consultant to the Nutrition Division of the Office of Defense, Health and Welfare Services, told the convention of the Potomac States Bakers Association, Do anything to give it to America, he declared, even if it becomes necessary to raise the price.

In the younger milling group is Robert B. Mirick, assistant chief engineer, Pillsbury Flour Mills Co., Minneapolis.

Robert B. Mirick

. . . young engineer . . .

He became a student engineer there in 1939 after graduating from Worcester Polytechnic Institute, Worcester, Mass., in June of that year. Two years later he was given his present title. Mr. Mirick has the degree of Bachelor of Science in Electrical Engineering. He is an associate of the American Institute of Electrical Engineers and a member of the Phi Sigma Kappa fraternity. He was born in Minneapolis.

E. J. Bermel

. . . flour club president . . .

E. J. Bermel is the newly elected president of the Pittsburgh Flour Club. He is the Pittsburgh manager of the Eagle Roller Mill Co.

When the Army acquired for the duration of the war the use of the civilian staff, buildings and equipment of the American Institute of Baking, Chicago, to train enlisted men as baking instructors, William Walmsley, who has been princi-

William Walmsley

. . no novice in feeding troops . .

pal of the institute, was retained to assist the quartermaster corps in operating the school. Training at the institute now will be provided exclusively for military personnel along lines already in effect at other Army baking schools. Mr. Walmsley is no novice in the business of feeding troops. In the World War I he assisted in the installation of Army bakeries in France.

Personal & Otherwise

TRADE WELL BOOKED

The trade is booked ahead further than usual at this time and is chiefly concerned now over transportation, reports Fred N. Burrall, general sales supervisor for the William Kelly Milling Co., Hutchinson, Kansas, home from an extended visit with eastern connections.

HOSPITALIZED

Frank Kostka, Oklahoma City, treasurer of the Dobry Flour Mills, Inc., Yukon, Okla., entered St. Anthony's hospital in Oklahoma City, Feb. 7, for an appendectomy.

AUTO ACCIDENT

William T. Taylor, Birdsey Flour Co., Augusta, Ga., and his wife were injured in an automobile accident Jan. 31, near Columbia, S. C. Both Mr. and Mrs. Taylor are confined in a Columbia hospital, where they are reported to be recovering.

BAKER'S BRIDE

Isaac C. Waters, assistant sales manager for the Seago Baking Co., Vidalia, Ga., and Miss Dora B. Lyons, of Savannah, Ga., were married on Feb. 2. After the wedding the couple left on an airplane trip to the West. Mr. Waters is a son of J. J. Waters, president of the Seago Baking Co. Mr. and Mrs. Waters will make their home in Valdosta, where they have a branch of the main bakery.

MILL TOUR

C. E. Rich, production manager, and Robert Boyd, superintendent, for the Ogilvie Flour Mills Co., Ltd., Winnipeg, Man., left Minneapolis Feb. 7 on the last lap of a trip during which they visited mills at various points in the states.

LONG WAY AROUND

Richard K. Peek, of Kansas City, vice president of the Percy Kent Bag Co., passed through New York with a brief stop-off, on his way to Florida for a vacation.

IN METROPOLIS

Miss P. M. Callahan, sales manager, George Urban Milling Co., Buffalo, was a visitor at the office of E. S. Thompson, during a recent business trip to New York.

EASTERN VISITOR

C. T. Vandenover, general sales manager, International Milling Co., Minneapolis, was introduced on the Produce Exchange by J. T. Lipford, manager of the New York office, during a recent eastern business trip.

BREAD MAKING DEMONSTRATION

Mrs. Clara Snyder, of the Wheat Flour Institute, Chicago, gave a demonstration of bread making to more than 500 farm women at Farm and Home Week at Kansas State College, Manhattan, recently.

BUSINESS IN FLORIDA

Howard Martin, Theodore W. Martin & Son, Atlanta brokerage firm, left Feb. 5 for a business trip to Florida.

AID CRIPPLED CHILDREN

Disabled children attending the Gaenslen school were able to attend President Roosevelt's birthday ball in Milwaukee, Jan. 31, through the courtesy of the Wisconsin Master Bakers Association which, through Fred Laufenberg, secretary, purchased a block of 24 reserved seats for the ball. The seats were turned over to the Milwaukee County Association for the Disabled, which in turn selected crippled children from the school to be the guests.

AT COMPANY BRANCHES

Howard W. Files and Harvey J. Patterson, vice presidents in charge of sales for the Pillsbury Flour Mills Co., Minneapolis, are visiting the company's branch offices, the former in the East and the latter in the South.

FLU IN FLORIDA

J. R. Henderson, regional manager, bulk flour sales, Pillsbury Flour Mills Co., returned to Atlanta from a trip to Florida. Mr. Henderson is recovering from an attack of flu which kept him in for a week while in Tampa, Fla.

FLORIDA VACATION

John McGraw, who until his retirement from the Royal Flour Co., Nashville, several months ago, was active in the flour and feed business, left recently for Florida where he plans to spend ten day or two weeks.

BROTHERS' WEDDINGS

Next Thursday, Feb. 12, at the First Christian Church of St. Joseph, Mo., Miss Mary Maxwell will be married to Elmer Modeer, managing director of the St. Joseph Testing Laboratories. Only the immediate family and close friends will attend the ceremony, which will be held at 4 o'clock. Mr. Modeer's brother, Victor, will be married the same day at the St. James Cathedral in St. Joseph.

LONG ABSENCE

Ben S. Hargis, eastern sales manager for Larabee Flour Mills Co., Kansas City, is returning this week from a long stay in eastern markets where he traveled with some of his salesmen.

ON WAY HOME

M. B. McVeigh, of Kelly-Erickson Co., Omaha flour brokers, visited friends in Kansas City late last week. He was returning to his home after a fortnight's trip through the East.

IN FLORIDA FOR MONTH

Francis P. Whiting, vice president, United Distributing Co., and George O. Collins, manager service department, Pillsbury Flour Mills Co., Minneapolis, with their wives, left Feb. 11 for a month's vacation at Sanibal Island, Fla.

WITH ATLANTA TRADE

L. O. Gottschicck, representative for the H. D. Lee Flour Mills Co., with headquarters at Raleigh, N. C., spent several days in Atlanta.

HOLIDAY IN WEST

Leslie R. Olsen, director of products control for the International Milling Co., Minneapolis, left last week for a vacation trip to California.

IN CHICAGO

Among outside millers in Chicago last week were: Moritz Milburn, Centennial Flouring Mills Co., Seattle, M. N. Men-

nel, Mennel Milling Co., Toledo, Elmer W. Reed, Shellabarger Mills, Salina, Kansas, and Clark R. Yager, Ballard & Ballard Co., Inc., Louisville, Ky.

RETURNS TO NORTH

J. J. Kelly, of the Kelly Flour Co., Chicago, is expected to return next week from Florida, where he has been spending several weeks at his winter home.

MINNEAPOLIS VISITORS

George Aylsworth, of the Chicago Great Western Railroad Co., Kansas City, and Mrs. Aylsworth spent several days in Minneapolis recently.

——BREAD IS THE STAFF OF LIFE——

VITAMIN A IN FEED WILL BE RATIONED BY U. S. WAR BOARD

WASHINGTON, D. C.—The War Production Board issued an order on Feb. 10, effective immediately, prohibiting the use or production for use in the manufacture of feeds of fish liver oil with a potency of more than 12,000 units of vitamin A per gram, and prohibiting, beginning April 10, the manufacture or preparation of feeds which in the form recommended for consumption contain more than 1,000 units of vitamin A per pound derived from fish or fish liver oils.

At the same time, the WPB limited use of vitamin A in the pharmaceutical field to doses prescribed by medical authorities as necessary for specified purposes.

Vitamin A from fish liver oils—which are a primary source—has been increasingly scarce because of the war, which has reduced commercial fishing activities drastically. Demand for the vitamin has increased, however, as it affects night blindness in particular and health in general, and both the United States and England have been large buyers in order to assure adequate supplies to armed forces.

——BREAD IS THE STAFF OF LIFE——

SEARLE GRAIN CO. OFFICIAL ASKS HIGHER WHEAT PRICE

WINNIPEG, MAN.—Addressing the agriculture bureau of the Board of Trade here last week, Major H. G. L. Strange, director of the research department of the Searle Grain Company, made a plea on behalf of wheat growers that they be assured $1.22 bu for No. 1 Northern, basis in store at Fort William, which would be equivalent to $1.03 bu at the country station.

He was opposed to the present method of paying 54c at country points, plus different kinds of bonuses, because, he maintained, not all wheat growers can qualify for these bonuses.

——BREAD IS THE STAFF OF LIFE——

White Corn Is Scarce in Corn State

DES MOINES, IOWA.—Millers here are having difficulty in finding enough white corn to fill their needs for white corn meal and hominy grits. A premium of 10c bu is being paid for the white variety. The quotation for white corn is 82½c, while that for yellow corn is 72½c.

Senator Gillette of Iowa has asked farm officials to encourage the production of white corn near milling centers and to tell farmers about a new white hybrid seed corn that will increase yields. Demand for white and yellow corn is about equal here, but white corn production has dropped in Iowa, as well as in other states, since the government's acreage reduction because of the higher yields per acre of the yellow. Yellow corn is not suitable for hominy grits, which are used in many states as a breakfast dish.

——BREAD IS THE STAFF OF LIFE——

BAKERS CLUB OF CHICAGO MOVES INTO NEW QUARTERS

CHICAGO, ILL.—The new club rooms of the Bakers Club of Chicago on the mezzanine of the Sherman Hotel have been completed and are now occupied. Secretary Wilmoth C. Mack has moved into the new quarters.

A cocktail buffet will be held on Feb. 12, beginning at 5:30 p.m., to celebrate the event. Invitations have been sent to all members. The club rooms have been beautifully furnished and decorated, and consist of a lounge room, dining and card room, and an office for Secretary Mack.

——BREAD IS THE STAFF OF LIFE——

TO PROTEST DECISION

WINNIPEG, MAN.—A joint meeting here of the Bakery Salesmen and Inside Bakery Employees units of the One Big Union included consideration of a strike vote with a protest against the decision handed down by a conciliation board in Ottawa recently on a bonus issue affecting local bakery employees. The council was instructed to refer the dispute to the Dominion Minister of Labor for review. If this fails the employees will inquire of the department of labor if it will conduct a strike vote. Affecting the Speirs-Parnell Baking Co., Ltd., and the Canada Bread Co., Ltd., of Winnipeg, the conciliation board recommended a bonus of $1 a week to all regular employees beginning Aug. 1, 1941. Edward Armstrong, employees' representative on the board, in his minority vote recommended a bonus of $2.75 a week.

OBITUARY

MRS. RUDOLPH FLACH

Mrs. Rudolph Flach, mother of George R. Flach, president of the Broenniman Co., Inc., died at her home in Elizabeth, N. J., on Feb. 4, after a short illness. Services were held Feb. 7 in St. Michael's Church in that city. Two other sons and a sister also survive her.

Burlap Imports Are Allotted; Cotton Stages Slow Recovery

NEW YORK, N. Y.—A comparatively large volume of burlap which arrived recently has kept importing houses busy allotting material and building the government stock pile. There has been a little difficulty over water damaged goods, as the order makes no allowance for this material. On the whole the local market was dull throughout the week, with very little spot business transacted.

As a technical reaction to Washington developments last week, the cotton market has staged a gradual recovery since midweek, with the advancing tendency still quite evident as the week closed.

In the upward movement the market has gained approximately 50 points from the recent lows, but trading is on a reduced scale with a nervous undertone prevailing because of uncertainties which still exist.

No clarifications of statements by Secretary Wickard and President Roosevelt are as yet forthcoming, and the situation regarding holding prices to parity and the release of government cotton to mills is still unsettled. In the meantime the trade awaits announcement of methods of selling some 300,000 bales of CCC cotton. Definite information on this question is expected momentarily.

Actual offerings on the market were moderate throughout the week, with some trade demand and commission houses buying sufficient to absorb it.

A news dispatch to New York this week stated that Argentina is planning a large national cotton sack factory. The shortage of jute bags and the necessity for a market for surplus cotton are the reasons advanced for considering the plant.

Reports from Calcutta indicate that the backlog of burlap at that port is diminishing rapidly. Although this backlog seemed adequate to load all vessels through March, it now seems doubtful that importers have ordered enough material to fill the vessels. The price situation points to difficulty in buying material for future shipment.

There are 10 vessels still scheduled to sail for North Atlantic ports and two others for Gulf ports, with recent arrivals quite consistent.

Future shipment quotations from Calcutta on Feb. 5 were unchanged to off 10 points for February, and unchanged to off 5 points for March.

Traders in second-hand bags reported some cancellations from consumers who seemed to hope to buy at the lower level effective Feb. 16. Opinion has been advanced that the price would be too low to attract emptiers, and that time was insufficient for disposal of stocks bought at the higher levels. The tendency of consumers to return bags to fillers has been criticized, as the inability of some fillers to clean and repair the bags may result in a reduced supply.

Compared with the previous month, Calcutta stocks of burlap at the end of January showed declines in all classifications. Total stocks at the end of last month amounted to 305,000,000 yards, compared with the December, 1941, figure of 350,000,000 yards. Stocks at the end of January, 1941, were listed as 217,000,000 yards. Stocks of heavy sacking goods declined 12,100,000 yards during January to 171,900,000 yards. This compared with 184,000,000 yards for December, 1941.

Bemis Bro. Bag Co.'s cotton goods index, a composite figure reflecting wholesale prices of principal cotton cloth used in bag making expressed in cents per yard of cloth, is 7.73 as compared with 5.24 a year ago. The Bemis composite figure reflecting duty paid early shipment prices of heavy and lightweight Calcutta burlap expressed in cents per lb of cloth is 16.51 as compared with 11.64 a year ago.

SMA INCLUDES FEED IN WEEK'S PURCHASES

Miscellaneous Feedingstuffs Listed in Supplies Bought During Week Ending Jan. 31—Month's Purchases Listed

WASHINGTON, D. C.—Among the supplies purchased by the Surplus Marketing Administration during the week ending Jan. 31 were the following amounts of miscellaneous feeds:

Wheat, lbs	1,140,000
Mixed wheat, lbs	1,760,000
Rolled barley, lbs	730,000
Western barley, lbs	180,000
Yellow milo, lbs	800,000
White oats, lbs	100,000

Among SMA purchases during the month of January were the following:

Commodity—	Quantity
Pork products—Canned pork, lbs	75,334,848
Cured pork, lbs	32,055,661
Hog casings, bundles	278,182
Lard, lbs	67,241,064
Canned fish (spots), cases	700
Canned chicken, lbs	712,200
Canned turkey, lbs	84,500
India mess beef, lbs	80,000
Beef bungs, pieces	81,000
American cheese, lbs	38,773,238
Dry skim milk (roller), lbs	13,651,050
Dry skim milk (spray), lbs	280,000
Evaporated milk, cases	5,400,495
Shell eggs, cases	121,497
Dried eggs, lbs	10,550,230
Soybeans, lbs	5,750,000
White flour, bbls	45,200
Rolled oats, lbs	50,010
Macaroni, lbs	50,004

These supplies can be used for domestic distribution to public aid families and for free school lunches, to meet requirements of the Red Cross, for shipment under the terms of the lend-lease act or other special programs, or for stabilization reserves.

——BREAD IS THE STAFF OF LIFE——

FRED N. ROWE ELECTED HEAD OF MICHIGAN GROUP

LANSING, MICH.—Fred N. Rowe, of Portland, was re-elected president of the Michigan Feed Manufacturers and Dealers Association at the ninth annual meeting held here Jan. 27. More than 100 members attended.

Ward Bronson, of Elwell, was re-elected first vice president, Lewis Moon was named second vice president, and John A. Krusoe, secretary-treasurer.

Directors elected included the above officers and Alfred Roberts, of Pigeon; Andrew Dohman, of Hamilton, and Lew Kaechele, of Caledonia.

Speakers at the convention were S. J. Krebsbach, of the Michigan department of revenue; E. L. Anthony, dean of the division of agriculture of Michigan State College, and Roy LaBudde, of the LaBudde Feed & Grain Co., Milwaukee.

——BREAD IS THE STAFF OF LIFE——

CONTROL OF TRADE TIGHTENED BY COURT

Ruling Gives Congress Power to Regulate Intrastate Commerce if It Competes With Interstate

WASHINGTON, D. C.—The United States Supreme Court strengthened federal authority over local business on Feb. 2 with a sweeping decision that Congress can regulate any trade—even that conducted entirely within one state—if it competes with interstate commerce.

The court upheld unanimously an order by the Secretary of Agriculture under the 1937 marketing agreement act fixing minimum prices for milk produced and sold entirely within Illinois. The tribunal took this stand because the product competed in Chicago with milk from outside the state, the price of which was regulated.

MARKETS IN DETAIL

U. S. FLOUR MARKETS

THE SOUTHWEST

Kansas City: Enough buyers had holes to fill in their bookings to bring sales by southwestern mills to 42% of capacity last week, compared with 55% the previous week and 64% a year ago. Although for the most part business seems to be light and unimportant, the total is not disappointing, considering the volume on the books.

Family business continues to come in on a hand-to-mouth basis with a fair total volume. Bakers spotty buyers now, with their contracts strung out. What flour they need for the balance of the crop year now remains as only a relatively small purchase to take care of on a soft market.

Clears steady, with some of the ordinary grades somewhat burdensome. Buyers not very active, although some business is being done between mills. Export business is a little better than routine. Operations have fallen off, with one or two mills shutting down for a few days to bring the average considerably lower than usual.

Quotations, Jan. 31: established brands family flour $6.90@7.15, bakers short patent $5.85@6.10, 95% $5.70@5.90, straight $5.60@5.90, first clear $3.90@4.10, second clear $3.70@3.95, low grade $3.60@3.70.

Of the mills reporting, 3 reported domestic business active, 2 fair, 10 quiet, 8 slow and 7 dull.

Oklahoma City: Sharply curtailed sales brought state's average to 32% compared with 90% last week. Only a few barrels exported to Latin America. Domestic sales divided 60% to family trade and balance to bakers. Little change in operation, which averaged 67% compared with 62% last week. Prices fluctuated, but closed unchanged. Quotations, Feb. 7: hard wheat short patent $6.80@7.85, soft wheat short patent $6.80@7.85, standard $6.50@7.45, bakers extra fancy $6.25@6.35, bakers short patent $6.10@6.20, bakers standard $6.05@6.15.

Omaha: Small volume booked. Demand tapered off. Sales from 17 to 60% of capacity production. Shipping directions on former sales continued in moderate volume, although in some quarters directions not quite as good. Mills operated full time, seven days and nights. Production, 33,600 bbls. Quotations, Feb. 7: family fancy short patent $6.20@6.65, standard patent $5.70@6.05, bakers short patent $5.75@6.05, standard patent $5.50@5.80.

Wichita: Sales fair to good—40 to 80%; mills operating from 90 to 100%; prices $5.95@6.20, bakers short patent, basis Kansas City.

Hutchinson: New bookings few and small. Interest virtually at standstill, with trade convinced the President holds the whiphand in the price row. Shipping directions harder to get.

Salina: Demand slow, with prices 5c bbl lower. Shipping directions slow also.

Texas: Disturbed by developments in Washington, buyers drew away from the market and volume of sales is considerably lower. Smaller units disposed of 25 or 30% of capacity, some large ones 10 or 15%, mostly family and in home territory. However, shipping directions good enough to maintain operations at an average of 80 or 90% of capacity. Prices unchanged despite moderate decline in wheat market. Quotations, Feb. 6: family flour 48's, extra high patent $7@7.50, high patent $6.50@7, standard bakers 98's $6.05@6.30; first clears, sacked, $4.80@4.90, delivered Texas common points or Galveston domestic rate.

THE NORTHWEST

Minneapolis: Very quiet on all fronts. Remarkably good inquiry of week ago subsided. Evidently uncertainties surrounding government price control program have kept out all buyers except those whose near-by needs are not covered. Latter category includes many car lot buyers, who were principal buyers this week. Total northwestern sales around 40% of capacity, compared with better than 75% week earlier and 83% year ago.

Spring wheat clears, comparatively scarce, are in good request and are still held very close to patent flour basis. Most companies oversold and have none to offer for immediate shipment. Shipping directions none too good, but show improvement over recent weeks. Revival of interest on the part of Latin American buyers, apparently, and some new business. Difficulties surrounding shipping causing importers to show more concern over future needs.

Quotations, Feb. 10: established brands of family patent $6.60@6.80, spring first patent $6.35@6.50, standard patent $6.25@6.30, fancy clear $6@6.20, first clear $5.70@5.95, second clear $4@4.50, whole wheat $5.95@6.05, graham standard $5@5.50.

Of the 15 Minneapolis mills, the following were in operation Feb. 10: Atkinson, King Midas, Minneapolis (two mills), Northwestern Consolidated A, Pillsbury South A, Durum A, Graham and Phoenix, Russell-Miller, Washburn Crosby A, C, F, Rye and Whole Wheat.

Duluth: Quotations, Feb. 7: first patent $6.90, second patent $6.70, first clear $6.30.

Interior Mills, Including Duluth: Flour inquiry very light all last week. Buyers lack confidence; only those who actually needed supplies for near-by deliveries bought, and then only in a limited way. Shipping directions fair to good. Feed market demoralized by government selling wheat for feed. No shipping demand whatever, and sales confined to local farmer inquiry for flour midds. and red dog, supplies of which are limited.

THE CENTRAL WEST

Chicago: Demand spotted; sales not so numerous. Some buying, but no substantial amounts taken. Trade in general has its needs pretty well covered, and mill representatives are now devoting more time to obtaining shipping directions. These are better. Family demand a little more active and deliveries continue good. Quotations, Feb. 7: spring top patent $6.10@6.50, standard patent $5.90@6.35, first clear $5.40@5.85, second clear $3.90@4.05, family flour $8.10@8.25; hard winter short patent $6@6.40, 95% patent $5.75@6.15, first clear $4.65@5.20; soft winter short patent $5.60@6.20, standard patent $5.45@6.05, first clear $4.70@5.05.

St. Louis: New business exceedingly slow; inquiries few and far between; buyers show no disposition to follow the market as the majority are pretty well booked up. Car lot orders unusually light; demand for hard wheat clears dull. However, a fair demand exists for the soft wheat variety, of which stocks are light. Jobbers advise practically no change in the situation. The trade is standing by. Instructions show a decrease. Quotations, Feb. 7: soft wheat short patent $6.35@7.25, straight $5.65@6.05, first clear $4.85@5.25; hard wheat short patent $5.60@6.30, 95% $5.45@5.95, first clear $4.50@4.90; spring wheat top patent $5.80@6.30, standard patent $5.65@6.05, first clear $5.35@5.80.

Toledo: Fair amount of sales. Business lively following recent flurry of buying when wheat prices reached highest point since 1937, receding on announcements from Washington. Step-up in production, reflecting improvement in directions. Big buyers may be booked through to end of crop, but purchasing power of industry far from exhausted.

Toledo bid for No. 2 red wheat, 26c rate points to New York, Feb. 6, was $1.25@1.25½, or 3½c under Chicago May future. Quotations, Feb. 6: soft winter wheat standard patent $5.90@6.15; locally made springs, high gluten $6.90, bakers patent $6.65, hard winter wheat bakers patent $6.55.

Cincinnati: Demand considerably off due to drop in prices. Supplies on all grades ample. Quotations, Feb. 7: spring short patent family $7@7.25, standard patent $6.50@6.75, first clear $5.50@5.75, hard winter short patent $6.50@6.75, standard patent $6@6.25, first clear $5@5.25, soft winter patent $6@6.25, standard patent $5.75@6, first clear $5@5.25.

EASTERN STATES

Buffalo: Directions, rather than new contracts, provide the most cheering news. Practically all classes of the trade ordered out more flour, insuring good mill schedules as well as reflecting the high state of consumer demand. Much greater retail volume, particularly, could be obtained, reports from leading operators in that branch of the trade indicate, except for the fact that the trade is beginning to feel the pinch of lack of competent labor. The house-to-house and wholesalers also reported as doing a good business while the family trade is pepped up by considerable consumer buying for hoarding. Prices a little easier. Spring first clears firm and hard to get. Foreign trade routine.

Quotations, Feb. 7: spring fancy patent $8.35@8.50 bbl, top bakery patents $6.80@6.90, standard patent $6.70@6.80, spring straights $6.60@6.70, spring first clears $5.90@6, soft winter short patent $7.05@7.20, pastry $6@6.10.

New York: Buying consisted of a routine car or two. While interest from various branches of the trade indicates that a definite market trend would stimulate it into orders, the substantial purchases made during January have provided a sufficient reserve to make immediate buying unnecessary and buyers' incentive is lacking to make the closings anything more than a car or two. Both spring and Kansas shared in the turnover with soft winters from the East still offered sparingly and undersold by 10@15c by Pacific Coast mills on all-rail flour.

Reports on shipping directions differ as some brokers found a decided slowing up of them, while others had equal difficulty in getting their mills to send out the flour. The continued shortage of bag material and the difference in quality also contributed to the troubles of the trade.

Quotations, Feb. 7: spring high glutens $6.85@7.15, standard patents $6.45@6.75, clears $6.20@6.50, Texas high glutens (top grade) $6.50@6.60, Kansas high glutens $6.45@6.70, 95's $6.35@6.55, soft winter straights $6.15@6.50.

Boston: New business hard to uncover, as market slipped lower. Almost all classes of trade well covered. Some bakers made offers, but their ideas were so low that mill agents could not give them serious consideration. Any buying in a general way improbable until present substantial holdings are worked lower. Trade in a position to wait for possibilities of better trading basis. Sales spotty, mostly of minimum car lot size. Volume evenly divided between spring and southwestern patents, and between baking and jobbing trades. Family flour buying continued satisfactory. Shipping directions good in some instances, poor in others. Prices a little easier at close. Quotations, Feb. 6: spring high glutens $7.10@7.25, short patents $6.85@7.05, standard patents $6.70@6.85, first clears $6.35@6.60; southwestern short patents $6.70@6.90, standard patents $6.55@6.70, Texas short patents $6.95@7.10, standard patents $6.80@6.95, soft winter patents $6.40@6.75, straights $6.20@6.40, clears $5.95@6.15.

Baltimore: Quotations unchanged as demand continues about steady; receipts, 67,955 bbls, an unusually high figure and an increase of 32,414 bbls over last week. Quotations, Feb. 7: spring first patent $6.90@7.15, standard $6.65@6.85, hard winter short patent $6.55@6.75, 95% $6.35@6.60, soft winter short patent $6.70@7.40, straight $5.30@5.65.

Philadelphia: Tone of market about steady early in week, but developed weakness later due to the downward movement in wheat and prices showed slight declines on all grades. No snap to the demand and buyers are operating cautiously. Buyers and sellers were apart in their ideas of value and the former show interest in most cases only where concessions are obtainable. General business confined to small lots for the satisfaction of actual wants. Quotations, Feb. 7: spring wheat short patent $6.85@7.05 bbl, standard patent $6.65@6.85, first spring clear $6.25@6.35, hard winter short patent $6.55@6.75, 95% $6.40@6.55, soft winter straights $5.45@5.95.

Pittsburgh: Sharp lack of demand due to ample stocks on hand. Buyers keeping an eye out for anticipated "breaks." Family flour demand continues brisk, with retail outlets indicating it as one of major sellers now. Shipping directions moderate. Prices unchanged but firm. Cake and pastry bakers took on fair-sized amounts of soft winters. Continued good demand for bakers' products, especially bread, due to increased activity in industrial centers. Sales of clears improved. Quotations, Feb. 7: spring short patent $6.85@7.10, standard patent $6.60@6.80, hard winter short patent $6.40@6.55, standard patent $6.30@6.45, low protein hard winter standard patent $6.25@6.35, spring clears $6.30@6.55, soft winters $5.15@5.30, bulk.

THE SOUTH

New Orleans: Continued dullness. Buyers for future delivery indifferent. Southwestern hard wheat flours again in best demand; other types quiet. Statement by Secretary Wickard that farm prices would not be allowed to rise above parity caused declines of 5@10c bbl. Bread and cake production good. Quotations, Feb. 7: hard spring wheat family patent $7.20@7.50, first patent $7@7.20, standard patent $6.70@6.90, fancy clear $6.15@6.40, first clear $5.90@6.10, second clear $5.30@5.70; hard winter wheat family patent $6.30@6.55, bakers short patent $6.05@6.30, 95% $5.85@6.05, first clear $4.90@5.50, second clear $4.50@4.80, soft wheat short patent $6.60@7.20, straight $5.55@6.20, first clear $4.95@5.30.

Atlanta: Fair sales continue. Blenders, however, slid backward, but movement to them continued on schedule. Family flour sales to jobbers fairly steady. Most dealers remain on hand-to-mouth basis rather than place bookings. Deliveries fair to good. Some reported shipment on hard wheat flours better than soft wheat. Many complaints from jobbers that bags are damaged on arrival due to poor condition of cars. Scattered sales to bakers made a pretty nice total, with numerous orders of 500, 1,000 and 5,000 bbls. Shipping instructions fair to good. Prices eased off 5@10c on most grades. Kansas family flour dropped 20c.

Quotations, Feb. 7: spring wheat bakers short patent $6.85@7.30, standard patent $6.75@7.05, straight $6.65@6.95, first bakery clear $6.45@6.80; hard winter wheat family short patent $7.20@7.30, fancy patent $6.80@6.90, standard patent $6.80@6.90, special or low grade $6.40@6.50, 95% $6.80, bakery short patent $6.45@6.65, standard patent $6.35@6.55, straight $6.25@6.45; low protein hard wheat 95% $6.10@6.15, bulk; first clear $5.05@5.20, bulk; second clear $4.80@5, bulk; soft wheat family short patent $7.55@7.75, fancy patent $7.15@7.35, standard patent $7.15@7.35, special or low grade $6.75@6.95, 95% $6.85; soft wheat short patent, bulk basis $6.05@6.45; soft wheat 95% $5.80@6.20, bulk; straight $5.70@6.10, bulk; fancy cut-off $5.30@5.45, bulk; first clear $5@5.20, bulk; second clear $4.75@4.90, bulk; Pacific Coast soft wheat 95% $6.10@6.15, bulk; hard wheat low protein 95% $5.95, bulk, both all rail, f.o.b. Atlanta; self-rising family flours quoted 25c higher.

Nashville: Millers and brokers complain that poor business has caused the buyers to be a little cautious in making new purchases. Local buyers carrying fairly good stocks and have contracts for 30 and 60 days. Outbound business to the merchants, jobbers and retailers in the South and Southeast has shown some improvement. This includes new purchases for immediate and prompt shipment and a few new bookings for 30 and 60 days. These buyers have been pleased to order out flour against older contracts, which show a profit and to a great extent are cleaning up the majority of these older contracts.

Bakers report that their sales have been fairly good for this season and inasmuch as the larger bakers are covered for some time most sales are for special grades and fill-in purposes. Shipments have been good. Prices about 10c under. Quotations, Feb. 7: soft winter wheat short patent $6.70@7.40, standard patent $6.40@6.70, fancy patent $6.10@6.40, clears $5.80@6.10, hard winter wheat short patent $6.40@6.85, standard patent $6.10@6.40, spring wheat short patent $6.90@7.20, standard patent $6.55@6.90.

PACIFIC COAST

Seattle: Market showed some activity early when considerable new business was booked. Later in the week with the market tending downward buyers saw little inducement and mills did not press sales.

Interior mills still able to sell to the Southeast to go all rail. Terminal mills not able to participate in this business. Confined to a strictly domestic market terminal mills are only able to operate at about 50% of capacity. It is rumored that in the near future some deal will be worked out whereby flour will again be shipped out of this territory under the lend-lease or the Surplus Commodity Credit Corp., with the probable destination somewhere in the Far East.

Quotations, f.o.b. Seattle or Tacoma, Feb. 7: family patent $7.15@7.35, bluestem $7.20@7.45, straight soft white $5.85@6.10, pastry $5.85@6, Dakota $7.35@7.50, Montana $6.85@7.

Portland: Some improvement in exports to South-Central America, but coast mill operations at low ebb. This trade not sufficient to offset loss of oriental trade. Some army business. Interior mill business with Middle West and Southeast very good, but coast mills get very little of this. Interior mill grindings up, with continuance of middle western trade. Domestic trade showing little improvement. Subsidy unchanged: $1.35 to Americas.

Quotations, Feb. 7: soft wheat straights $5.80, f.o.b. Nashville; f.o.b. mill, all Montana $6.45@6.65; bluestem bakers, unbleached $6.40@6.60, bluestem bakers $6.10@6.30, Big Bend bluestem $6.10@6.30, cake $8.10@8.30, pastry $5.30@5.50, pie $5.30@5.50, fancy hard wheat clears $6@6.20; whole wheat, 100% $5.90@6.10, graham $5.45@5.65, cracked wheat $5.45@5.65.

San Francisco: Prices easier, but business continues slow. With the sugar supply uncertain, many retail bakers are faced with possible curtailment of production; in many cases it has been necessary already. Consequently, they are not particularly interested at this time. Consumption should show some increase as bakers concentrate more on their breads and rolls, which require a minimum of sugar, and this trend is already noticeable.

Quotations, Feb. 7: eastern family patents $8.80@9, California family patents $8.60@8.80, Oregon-Washington bluestem blends $6.30@6.50, northern hard wheat patents $6.15@6.30, pastry $5.50@5.70, Dakota standard patents $6.60@6.80, Idaho hard wheat patents $6.40@6.60, Montana spring wheat

GRAIN FUTURES—CLOSING PRICES

Closing prices of grain futures at leading option markets, in cents per bushel:

WHEAT

	Minneapolis		Chicago		Kansas City		St. Louis		Duluth	
	May	July	May	July	May	July	May	July	May	July
Feb. 4	124⅞	126⅝	130¼	131⅝	123¾	124¾	....	....	117¾	119½
Feb. 5	124¼	126	129⅝	131	123¼	124⅛	....	....	116⅞	118⅝
Feb. 6	123	124⅝	128⅝	130½	122¼	123⅛	....	....	117	118¾
Feb. 7	123	124¾	128¾	130¼	122⅜	123½	....	....	117	118⅞
Feb. 9	123⅛	124⅞	128⅝	130¼	122⅜	123⅝	....	....	117⅛	118¾
Feb. 10	124⅛	125¾	129½	131	122⅞	124	....	....	118¾	120⅛

	Portland		Seattle		Winnipeg		Liverpool		Buenos Aires	
	May	July	May	July	May	July	Closed		Closed	
Feb. 4	105	....	104½	....	80⅞	81⅞	....	....	....	....
Feb. 5	105	....	104	....	80⅞	81¾	....	....	....	....
Feb. 6	104	....	103½	....	80¼	81¼	....	....	....	....
Feb. 7	104	....	103½	....	80½	81⅝	....	....	....	....
Feb. 9	...	....	....	....	80⅝	81⅝	....	....	....	....
Feb. 10	...	....	....	....	80½	81⅝	....	....	....	....

	CORN						OATS			
	Minneapolis		Chicago		Kansas City		Chicago		Minneapolis	
	May	July	May	July	May	July	May	July	May	July
Feb. 4	81	....	87¾	89⅛	82⅞	84⅛	57¼	58	54¼	53⅝
Feb. 5	80⅝	....	87⅜	89	82¼	83⅞	57⅝	57	53⅜	53⅜
Feb. 6	79⅜	....	86¼	88	81⅜	83⅛	56⅝	56	52⅜	52⅜
Feb. 7	78⅞	....	86⅜	88⅛	81⅜	83⅛	57	56⅜	53	52⅝
Feb. 9	79⅝	....	86⅜	88⅛	81⅜	83¼	56¾	56⅜	53	52⅝
Feb. 10	80⅛	....	87⅛	89¼	82⅛	84¼	57¼	56¾	53⅝	53¼

	RYE				FLAXSEED				BARLEY
	Chicago		Minneapolis		Minneapolis		Duluth		Minneapolis
	May	July	May	July	May	July	May	July	May	July
Feb. 4	87	89¼	82¾	85	227¾	229	227¾	....	66	68
Feb. 5	86⅞	89⅛	82⅛	84⅛	228	229¾	228	....	65⅝	67⅝
Feb. 6	85½	87⅞	80⅞	83	228	229¾	228	....	65	67⅝
Feb. 7	85⅞	88¼	81½	83½	227¾	228¾	227¾	....	65	67
Feb. 9	86¼	88⅝	81⅝	83¾	229	230½	229	....	65	67
Feb. 10	87	89½	83	85	228¾	230¼	228¾	....	65	67

A SUMMARY OF FLOUR QUOTATIONS IN LEADING MARKETS

Week-end flour quotations, per bbl of 196 lbs, packed in 98-lb cottons or 140-lb jutes. All quotations on basis of carload lots, prompt delivery.

	Chicago	‖Minneapolis	Kansas City	St. Louis	Buffalo	New York	Baltimore	Philadelphia	Boston	Cincinnati	†Nashville
Spring first patent	$6.10@ 6.50	$6.35@ 6.50	$....@....	$5.80@ 6.30	$6.80@ 6.90	$6.85@ 7.15	$6.90@ 7.15	$6.85@ 7.05	$6.85@ 7.05	$7.00@ 7.25	$6.90@ 7.20
Spring standard patent	5.90@ 6.35	6.25@ 6.30	....@....	5.65@ 6.05	6.70@ 6.80	6.45@ 6.75	6.65@ 6.85	6.65@ 6.85	6.70@ 6.85	6.50@ 6.75	6.55@ 6.90
Spring first clear	5.40@ 5.85	5.70@ 5.95	....@....	5.35@ 5.80	5.90@ 6.00	6.20@ 6.50	....@....	6.25@ 6.35	6.35@ 6.60	5.50@ 5.75	....@....
Hard winter short patent	6.00@ 6.40	....@....	5.85@ 6.10	5.60@ 6.30	....@....	6.45@ 6.70	6.55@ 6.75	6.55@ 6.75	6.70@ 6.90	6.50@ 6.75	6.40@ 6.85
Hard winter 95% patent	5.75@ 6.15	....@....	5.70@ 5.90	5.45@ 5.95	....@....	6.35@ 6.55	6.35@ 6.60	6.40@ 6.55	6.55@ 6.70	6.00@ 6.25	6.10@ 6.40
Hard winter first clear	4.65@ 5.20	....@....	3.90@ 4.10	4.50@ 4.90	....@....	....@....	....@....	....@....	....@....	5.00@ 5.25	....@....
Soft winter short patent	5.60@ 6.20	....@....	....@....	6.35@ 7.25	7.05@ 7.20	....@....	6.70@ 7.40	....@....	6.40@ 6.75	6.00@ 6.25	6.70@ 7.40
Soft winter straight	5.45@ 6.05	....@....	....@....	5.65@ 6.05	....@....	6.15@ 6.50	*5.30@ 5.65	*5.45@ 5.95	6.20@ 6.40	5.75@ 6.00	6.40@ 6.70
Soft winter first clear	4.70@ 5.05	....@....	....@....	4.85@ 5.25	....@....	....@....	....@....	....@....	5.95@ 6.15	5.00@ 5.25	5.80@ 6.10
Rye flour, white	4.75@ 5.25	4.85@ 5.25	....@....	....@ 5.70	....@ 6.00	5.15@ 5.70	....@ 5.10	5.35@ 5.55	....@....	4.50@ 4.75	....@....
Rye flour, dark	3.65@ 4.25	4.00@ 4.50	....@....	....@ 5.00	....@ 5.30	....@....	....@ 4.40	....@....	....@....	....@ 4.00	....@....

	††Seattle (98's)	S. Francisco	Standard patent—	Seattle	San Francisco		Toronto	**Winnipeg		Toronto	**Winnipeg
Family patent	$7.15@7.35	$8.60@8.80	Dakota	$7.35@ 7.50	$6.60@ 6.80	Spring top patent¶	$....@5.25	$....@5.30	Spring exports‡	28s	....
Soft winter straight	5.85@6.10	....@....	Montana	6.85@ 7.00	6.30@ 6.50	Spring second pat.¶	....@4.50	....@4.80	Ont. 90% patents‡	$5.20@5.40	....
Pastry	5.85@6.00	5.50@5.70				Spring first clear¶	....@3.40	....@....			

*Includes near-by straights. †Nashville prices basis f.o.b. Ohio River points for soft winter wheat flour. **In cottons, Fort William basis. ¶98-lb jutes. ‡Second-hand jutes. §140-lb jutes. ‖Tuesday prices. ††F.o.b. Atlantic ports.

patents $6.40@6.60, Montana standard patents $6.30@6.50, California bluestem patents $5.90@6.20, California pastry $5.30@5.50.

CANADIAN MARKETS

Toronto-Montreal: Spring wheat flour business quiet. Price ceiling situation far from favorable. Some mills refusing to book ahead at current levels. Lists unchanged. Quotations, Feb. 7: top patents $5.25 bbl, seconds $4.50, bakers $4.30, in 98's, jute, car lots, net cash, track, Toronto-Montreal territory.

New export sales of spring wheat flour light. Some business from Jamaica has been booked, but other West Indian markets not interested. Stocks there are believed to be sufficient for some time. Shipping facilities restricted. Newfoundland is not in market and there is little prospect of any new business from that quarter until about end of March. No new buying has developed from British Ministry of Food. Asking prices unchanged. Quotations, Feb. 7: vitaminized flour for shipment to the United Kingdom, 28s per 280 lbs, jute, f.o.b. February seaboard; 28s 3d March.

Trade in Ontario winter wheat flour dull. Little or no wheat moving and price too high to enable mills to keep flour within ceiling level. Little business being done in blends which mills are able to offer at prices slightly more attractive to buyers than pure Ontario winters. Demand for winters from British West Indies is at standstill due to high values as compared with springs. Price unchanged from a week ago. Quotations, Feb. 7: Ontario winter wheat flour $5.20@5.40 bbl, in second-hand jute bags, f.o.b. Montreal; $5, bulk lots for export, in buyers' bags.

Deliveries of Ontario winter wheat poor and car lots seldom if ever available. Prices more or less nominal at ceiling levels. Quotations, Feb. 7: $1.26 bu, f.o.b. basis Montreal, of which equivalent is $1.12@1.14 bu, f.o.b. shipping points.

Winnipeg: Domestic demand less active and sales on a moderate scale, with bakeries the best buyers; no new export business reported by western mills; plants not operating to capacity; a number of mills operating only an eight-hour shift. No accumulation of supplies. Quotations, Feb. 7: top patent springs for delivery between Fort William and the British Columbia boundary, $5.30, cottons; seconds, $4.80; second patents to bakers $4.60.

Vancouver: Coming only a week after flour quotations here had been boosted 10c per bbl, western flour managers were advised at the end of the week that there had been a 30c decline in prices.

The recent advance was first since Wartime Prices and Trade Board ceiling on prices went into effect on Dec. 1 and embodying the average price between Sept. 15 and Oct. 11. The increase brought about considerable turmoil in the trade, with some buyers refusing to accept boost and appealing to price administrator.

The sudden drop of 30c came as a distinct surprise, and while it came too late in week to judge increased demand, a sharp boost in sales is expected. Decline was put into effect in compliance with price ceiling and cancels changes made by mills last November in package differentials.

New quotations on a cash basis in cotton 98's are $5.40. Bakers patents remained unchanged at $5 in cotton 98's. Same holds true with imported Ontario pastry, which is worth $7.60 to trade and $7.40 to retailers. Supplies of Ontario grinds are reported ample, with demand steady.

MILLFEED MARKETS

Quotations Tuesday, Feb. 10

Minneapolis: Not much snap; sentiment a little better, however. Buyers uninterested in spot feed will take on std. and flour midds. at present levels for March-April shipment, but few are anxious to sell. Bran would have to be discounted a little to attract future shipment buyers, but again sellers feel market has softened enough already, and prefer to hang on to holdings rather than to sell at further discount. Comparative steadiness in prices due more to lack of offerings than to inquiry; not much to be had, but spot needs easily satisfied. Buyers and sellers about 50c apart in views; bran could be sold at $33.50 Chicago, with sellers asking $34. Minneapolis basis: bran and std. midds. $32, flour midds. $33, red dog $33.50.

Kansas City: Flat; trend lower; supply light but plentiful for demand; bran $30@30.25, shorts $31.25@31.50.

Oklahoma City: Fair; prices $1 lower on each class; bran $1.65@1.70 per bag of 100 lbs, mill run $1.68@1.72½, shorts $1.70@1.75.

Omaha: Most mills oversold and unable to fill current orders; bran $31@31.25, pure bran $31.50@31.75, brown shorts $32, gray shorts and flour midds. $32.25@32.50, red dog $35.

Denver: Moderate; trend firm; supply adequate; bran, std. red $31, red mill run $32, white $33; shorts, gray $34, brown $35; red dog, $36.

Hutchinson: Fairly active; trend weaker; supply adequate; bran $30.75, mill run $31.15, gray shorts $31.50 (Kansas City basis).

Salina: Good; trend lower; supply and demand match fairly well; basis Kansas City std. bran $30.75@31.25, gray shorts $31.50@32.

Fort Worth: Fair; trend lower; supply ample; wheat bran $34.60@35, gray shorts $36.40@37, white shorts $41@42, car lots, del. TCP or Galveston domestic rate.

Chicago: Quiet, due to feed wheat sales; trend easier; supply plentiful, but not burdensome; spring and hard winter bran $34.50@34.75, std. midds. $34.50@35, flour midds. $36@37, red dog $36@37.50.

St. Louis: Bran $32.75@33, pure bran $33@33.25, gray shorts $33.75@34, brown shorts $33.25@33.50, red dog $35.

Toledo: Breaking, following breaks in wheat market; soft winter wheat bran $34, mixed feed $34.50, flour midds. $35, std. $34.50.

Buffalo: Erratic caused by effect of government feed wheat program and resulting uncertainty and lack of understanding as to just what final result will be; trend somewhat weak; supply light; bran $36.50, std. midds. $36, flour midds. $35, second clear $40, red dog $34.50, heavy mixed feed $35.50.

New York: Light; trend steady; supply ample; bran $42.35, std. midds. $42.35, flour midds. $41.60, red dog $41.60.

Boston: Sagging heavily; buyers withdrawing from market; only business done on immediate needs; Buffalo and western sources offered freely, latter being somewhat higher on midds., but with no differential on bran. A few Canadian offerings and light shipments on old contracts; spring and winter bran $41@42, std. midds. $39.75@40.25, flour midds. $40.75@41.25, red dog $38.50.

Baltimore: Slow; trend very weak; supply heavy; std. bran $37, pure soft winter bran $37.25, std. midds. $36.50, flour midds. $34.50, red dog $34.50.

Philadelphia: Slow; trend easier; supply moderate; bran, std. $40@40.50, pure spring $40.50@41, hard winter $40.50@41, soft winter nominal; midds., std. $40.50@41, flour $41@42, red dog $41@42.

Pittsburgh: Moderate; trend lower; supply ample; spring bran $38.40, red dog $38.40.

Atlanta: Slow and hand-to-mouth; trend unsteady; supply ample; reports from New Orleans stated that there were no additional receipts of Argentine feeds, but supplies of fancy midds. received previously were quoted at $35.50, several dollars per ton below domestic quotations on comparable basis; bran $40@41, gray shorts $41@42, std. midds. $41.90@44, rye midds. $37.75@38, red dog $45.40@48.

Nashville: Even though prices are lower, sales are very light, due probably to the fact that the grain now being used for feeding purposes figures some $6@8 per ton under the price of millfeed delivered Nashville. Bran $27@27.25, gray shorts $28@28.50, std. midds. $28.50@29, soybean meal $47@47.50.

Seattle: Fair; trend strong; supply fair; $35@36.

Portland: Std. mill run $36, bran $37, shorts $38, midds. $41.

Ogden: Trade quiet. Undertone firm; mills sold well ahead; outlook steady. Quotations unchanged. To Utah and Idaho dealers: red bran and mill run $34, blended $34, white $34.50, midds. $40.50, carload lots, f.o.b. Ogden. Denver prices: red bran and mill run $39, blended $39, white $39.50, midds. $45.50. California: red bran and mill run $41, blended $41, white $41.50, midds. $47.50, car lots, f.o.b. Los Angeles. Millfeed prices for San Francisco shipments quoted 50c under Los Angeles.

San Francisco: Market steady to weaker, but selling pressure very light; demand very slow, with buyers awaiting possible effect of wheat program; Kansas bran, $41@41.50; Utah-Idaho: red mill run $39@39.50, blended $39.50@40, white $40@40.50; Oregon-Washington: red mill run $39@39.50, std. $39.50@40, white $40@40.50, white bran $41.50@42, midds. $43@43.50, shorts $42@42.50; Montana: bran and mill run $41.50@42; California: blended mill run $39.50@40, white $40@40.50.

Los Angeles: Fair; trend unsteady; supply limited; Kansas bran $42.50, local midds. $46, local mill run $41.

Toronto-Montreal: Tread steady; demand active; production insufficient to take care of market requirements; export embargo on western millfeed still on. Apparently Ottawa does not consider that the domestic situation warrants lifting of ban. For domestic values to buyer deduct $4.50 ton, amount of freight subsidy, from following prices; bran $29, shorts $30, midds. $33 ton, net cash, bags included, mixed or straight cars, track, Montreal freights.

Winnipeg: Apart from continued good movement to eastern Canada to meet feeding requirements, trade quiet, with western purchases at a minimum; supplies on hand not heavy; prices firm; bran $28, shorts $29, Man. and Sask; Alta. bran $25.50, shorts $26.50; small lots ex-country elevators and warehouses $3 extra.

Vancouver: Trend steady; prices unchanged after recent dollar advance; demand reported good due to the cold spell and cheaper prices resulting from federal freight assistance measure; stocks reported ample for current needs; bran $29.80, shorts $30.80 and midds. $33.80. Still no interest or quotation on feed flour, which is far out of line with other feeds.

UNITED STATES VISIBLE GRAIN SUPPLY

Visible supply of grain in the United States, as compiled by the secretary of the Chicago Board of Trade, in bushels (000's omitted), of date Feb. 7, and corresponding date of a year ago:

	Wheat		Corn		Oats		Rye		Barley	
	1942	1941	1942	1941	1942	1941	1942	1941	1942	1941
Baltimore	7,820	373	693	655	15	17	122	90	2	1
Buffalo	7,588	4,069	8,187	1,329	540	833	3,059	312	283	379
Afloat	3,816	3,479	..	..	..	..	205	..	267	338
Chicago	14,440	11,056	10,983	13,280	2,588	842	2,417	1,499	402	564
Afloat	353	288	187	..	..	..	2,242	199	..	..
Detroit	160	85	2	3	5	5	2	2	225	170
Duluth	32,061	18,774	4,932	2,660	699	191	1,591	725	1,323	365
Fort Worth	11,193	8,609	697	939	140	119	23	1	177	19
Galveston	5,297	1,035	..	75	..	..	..	..	..	..
Hutchinson	9,618	7,387	..	..	..	..	..	..	..	..
Indianapolis	1,663	1,799	1,882	1,234	452	494	138	183	..	..
Kansas City	35,097	28,938	3,923	7,893	214	81	499	388	352	6
Milwaukee	2,727	646	983	3,761	250	26	834	272	1,029	1,177
Afloat	..	..	..	..	..	..	479	..	..	..
Minneapolis	39,111	25,955	3,428	10,275	1,509	1,315	4,698	1,871	4,312	3,626
New Orleans	1,782	60	85	363	23	186	..	1	..	..
New York	531	52	329	16	40	5	38	39	..	3
Afloat	24	..	51	..	..	..	..	..	..	..
Omaha	13,842	7,591	7,010	13,599	385	18	447	2	278	3
Peoria	1,076	791	301	665	..	10	..	..	156	152
Philadelphia	2,211	170	492	110	16	10	10	2	3	1
St. Louis	5,879	6,476	2,484	1,436	349	225	92	6	18	4
Sioux City	1,740	723	1,651	1,659	102	34	2	..	17	9
St. Joseph	6,199	4,036	753	2,772	153	138	8	8	12	9
Wichita	7,489	3,932	6	2	3	..	3	..	29	..
Totals	211,717	136,319	49,059	62,726	7,483	4,549	16,909	5,600	8,885	6,826

SUMMARY OF MILLFEED QUOTATIONS

Week-end millfeed quotations, summarized from the market reviews, are based on carload lots, prompt delivery, per ton, packed in 100-lb sacks, f.o.b. at indicated points:

	Chicago	‡Minneapolis	Kansas City	St. Louis	Buffalo
Spring bran	$34.50@34.75	$32.00@....	$....@....	$....@....	$....@36.50
Hard winter bran	34.50@34.75	....@....	30.00@30.25	32.75@33.00	....@....
Standard middlings*	34.50@35.00	32.00@....	....@....	33.25@33.50	....@36.00
Flour middlings†	36.00@37.00	33.00@....	31.25@31.50	33.75@34.00	....@35.00
Red dog	36.00@37.50	33.50@....	....@....	....@35.00	....@34.50

	Baltimore	Philadelphia	Boston	Cincinnati	Nashville
Spring bran	$....@37.00	$40.00@40.50	$41.00@42.00	$....@....	$....@....
Hard winter bran	....@....	40.50@41.00	....@....	....@....	....@....
Soft winter bran	....@37.25	....@....	41.00@42.00	37.00@37.50	27.00@27.25
Standard middlings*	....@36.50	40.50@41.00	39.75@40.25	....@37.50	28.50@29.00
Flour middlings†	....@34.50	41.00@42.00	40.75@41.25	37.50@38.25	28.00@28.50
Red dog	....@34.50	41.00@42.00	....@38.50	....@40.00	....@....

	Spring bran	Shorts	Middlings
Toronto	$....@29.00	$....@30.00	$....@33.00
‖Winnipeg	....@28.00	....@29.00	....@....

*Brown shorts. †Gray shorts. ‖Fort William basis. ‡Tuesday prices.

SEMOLINA MARKETS

Minneapolis: Inquiry spotted, and rather light sales last week. Apparently, there were fair bookings two weeks ago, about evenly divided between standard semolinas and flours. These purchases, added to already heavy volume on mill books, no doubt will care for trade needs for some time to come. Macaroni manufacturers doing a nice business, and this is verified by a steady run of shipping directions, the best in a long time. No change in prices since early in January; fancy No. 1 semolina $6.30@6.40 bbl, bulk, f.o.b. Minneapolis, standard No. 1 $6@6.10, and granular $5.90@6, with reported sales at 10@20c less.

In the week ended Feb. 7, nine Minneapolis and interior mills made 94,140 bbls durum products, against 86,566 in the previous week.

Pittsburgh: Demand limited; trend unchanged; supply ample; No. 1 $7.10, nom.

Philadelphia: Market dull, with offerings ample and undertone easy; No. 1 durum semolina $6.75@6.85.

Chicago: Lower prices did not stimulate buying, only scattered sales reported; directions fair; No. 1 semolina, $6.35@6.50.

Buffalo: Light; shipping directions fair; trend steady; supply ample; No. 1, $7.30; durum fancy patent $7.30, macaroni flour $6.40, first clear $5.40, second clear $4.45, durum granular $6.80.

St. Louis: Prices unchanged; sales and shipping directions slow; first grade semolina $7.35, granular $6.90, No. 3 $6.70, durum fancy patent $7.35.

RYE PRODUCTS

Minneapolis and Interior Minnesota: Some improvement in sales. Trade inclined to lack confidence in advance, and put off buying just as long as possible. Directions continue good, however, and it begins to look as though general improvement in buying cannot be deferred much longer; pure white rye flour $4.85@5.25 bbl, in 98-lb cottons, f.o.b. Minneapolis; pure medium $4.65@5.05, pure dark $4@4.55.

Pittsburgh: Demand easier; trend unchanged; supply ample; pure white rye $5.50@5.75, medium $5.20@5.35, dark $4.40@4.65.

Philadelphia: Market unsettled and ir-

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regular; prices show a downward trend; offerings more liberal, while demand is only moderate; white patent $5.35@5.55.

Portland: Pure dark rye $5.70@5.80, medium dark rye $5.80@5.90, Wisconsin pure straight $6.60@6.70, Wisconsin white patent $6.90@7.

Cincinnati: Demand continues easier, with prices steady; white $4.50@4.75, medium $4.25@4.50, dark $4.

Chicago: Market not very active, with only sales of occasional cars reported; shipping directions better; white patent $4.75@5.25, medium $4.55@5.05, dark $3.65@4.35.

Baltimore: Quotations on rye flour and No. 2 rye steady; demand little changed; rye flour, dark to white $4.40@5.10 bbl, No. 2 rye 85@90c bu; rye stock in local elevators decreased 1,500 bus during the week to a total of 122,009 bus.

St. Louis: Prices unchanged; sales and shipping directions slow; pure white flour $5.70 bbl, medium $5.50, dark $5, rye meal $5.30.

Buffalo: Demand light; trend steady; supply ample; dark $5.30, medium $5.80, white $6.

New York: A few sales of generally routine character reported by mills, whose prices were at the lower end of the range; pure white patents $5.15@5.70.

OATMEAL MARKETS

Toronto-Montreal: Rolled oats and oatmeal in light demand; mild weather has curtailed consumption; price unchanged. Quotations, Feb. 6: rolled oats $3.25 per 80-lb bag, delivered, mixed cars, Toronto-Montreal; for export 50s 6d per 280 lbs, jute, f.o.b. Canadian seaboard.

Winnipeg: Trade only moderate; no export business confirmed for some time; supplies remain light; prices firm. Quotations, Feb. 7: rolled oats, in 80-lb sacks, $3.25 in three prairie provinces; oatmeal, in 98-lb sacks, 20% over rolled oats.

Minneapolis: Rolled oats were quoted on Feb. 9 at $3.65 per 90 lbs, bulk; 20-oz packages $2.20 case; 48-oz packages, $2.35.

Western Canada Visible Grain Supply

Visible supply of grain in the western inspection division Feb. 6, 1942, and receipts and shipments during the past week, in bushels (000's omitted):

Fort William and Port Arthur—	Wheat	Durum	Oats	Barley
Semi-public terminals	113,885	598	1,581	3,917
Private terminals	1	..	44	14
Winter storage—Afloat	1,726	..	..	..
Totals	115,612	598	1,625	3,930
Vancouver-New Westminster	18,095	..	117	59
Int. public and semi-public elevators	17,637	..	54	7
Churchill	2,617	..	..	..
Victoria	1,032	..	..	..
Prince Rupert	1,206	..	..	..
Totals	156,199	598	1,796	3,997
Year ago	126,788	1,431	1,838	1,239
Receipts during week—				
Ft. Wm.-Pt. Ar.	4,481	15	327	171
Pacific seaboard	49	..	7	2
Int. public and semi-public elevators	11	..	9	4
Totals	4,541	15	343	176
Shipments during week—				
Ft. Wm.-Port Arthur—Rail	225	43	516	277
Int. public and semi-public elevators	80	..	8	..
Pacific seaboard	43	..	6	2
Totals	348	43	530	279

TOTAL RECEIPTS
Aug. 1, 1941-Feb. 6, 1942

Ft. Wm.-Pt. Ar.	138,076	1,345	11,487	15,176
Pacific seaboard	1,655	..	212	85
Int. public and semi-public elevators	361	..	123	43

TOTAL SHIPMENTS
Aug. 1, 1941-Feb. 6, 1942

Ft. Wm.-Pt. Ar.	104,263	1,396	12,561	12,374
Pacific seaboard	1,066	..	116	45
Int. public and semi-public elevators	2,677	1	64	34

United States Grain Stocks

Commercial stocks of grain in store and afloat at the principal markets of the United States at the close of the week ending Jan. 31, 1942, and Feb. 1, 1941, as reported to the United States Bureau of Agricultural Economics, in bushels (000's omitted):

	American		Canadian in bond	
	Jan. 31 1942	Feb. 1 1941	Jan. 31 1942	Feb. 1 1941
Wheat	258,412	161,088	22,046	45,496
Corn	50,326	70,278	...	...
Oats	8,624	5,664	55	623
Rye	16,785	6,223	1,592	3,679
Barley	9,648	8,195	729	398
Flaxseed	4,887	5,014	...	...

Stocks of United States grain in store in Canadian markets Jan. 31 (figures for corresponding date a year ago given in parentheses): wheat 369,000 (223,000) bus; corn, 2,587,000 (71,000); oats, 8,000 (none); rye, 24,000 (24,000); barley, none (none).

CANNON VALLEY
is manufacturing one of the outstanding flours made in Minnesota. A perfect flour, laboratory controlled. Many of our old customers and some of our new connections have written us voluntarily that they have never had so many favorable comments. We can please the most exacting.

CANNON VALLEY MILLING CO.
Chamber of Commerce
Minneapolis

Leading Patents
VANITY FAIR
TELEPHONE
MARITIME
} Laboratory Controlled

The Rodney Milling Co.
5,000 Bbls Capacity
KANSAS CITY, MISSOURI
"Heart of America" FLOUR
CHICAGO OFFICE:
Kelly Flour Co., 844 Rush St.
BOSTON OFFICE:
Seaboard Allied Milling Corporation, 1209 Statler Bldg.

American Ace
—A very fine, short, strong patent milled in one of the West's very finest flour mills.
Goerz Flour Mills Co.
NEWTON, KANSAS

White Crest
THE BEST SOFT WHEAT
FLOUR
The J. C. Lysle Milling Company
Leavenworth, Kansas
Millers of Soft and Hard Wheat Quality Flours

"CREMO"
Just the Cream of Hard Wheat
CROOKSTON MILLING CO.
CROOKSTON, MINN.

GRAIN GROWERS ANNOUNCE STORAGE EXPANSION PLANS

WALLA WALLA, WASH.—Purchase of the Valley Grove Warehouse Co.'s plant and plans for the construction of a 125,000-bu elevator are announced by the Walla Walla (Wash.) Grain Growers.

The conversion of a portion of the Valley Grove warehouse into bulk grain storage sufficient to bring the Grain Growers' capacities there to 225,000 bus is planned also, according to A. Eugene Kelley, manager for the Grain Growers.

Construction of the elevator at Valley Grove is expected to begin at once. This property is located on the Union Pacific Railroad eight miles north of Walla Walla. The warehouse now taken over has a capacity of 150,000 bus.

——BREAD IS THE STAFF OF LIFE——

OHIO GRAIN DEALERS WILL MEET AT TOLEDO

TOLEDO, OHIO.—The Ohio Farmers Grain Dealers Association, of which Charles Latchaw, Defiance, Ohio, is secretary, will hold its annual meeting Feb. 23-24 at the Secor Hotel, here. The Toledo Board of Trade takes an active part as welcoming host.

——BREAD IS THE STAFF OF LIFE——

Flour and Grain Receipts and Shipments

Receipts and shipments of flour and grain at the principal distributing centers for the week ending Feb. 7, as compiled by the Daily Trade Bulletin‡, flour given in barrels, grain in bushels (000's omitted throughout):

RECEIPTS

	Flour	Wheat	Corn	Oats	Rye
Chicago	270	148	2,070	238	94
Duluth	..	692	356	4	156
Indianapolis	..	50	497	164	4
Kansas City	..	1,032	1,288	52	..
Milwaukee	22	9	295	..	19
Minneapolis	..	2,921	866	892	627
Omaha	..	263	1,209	194	..
Peoria	52	35	1,216	34	31
Sioux City	..	21	234	66	5
St. Joseph	..	141	186	264	..
St. Louis	170	270	700	66	28
Wichita	..	246	..	..	..
Totals	514	5,828	8,917	1,974	964
Seaboard—					
Baltimore	68	443	41	36	7
Boston	27	103	..	2	..
Galveston	..	2	..	..	..
New York	189	548	..	3	8
New Orleans	21	..	48	10	..
Philadelphia	33	..	3	..	..
Totals	330	1,096*	92	51	15
Grand totals	852	6,924	9,009	2,025	979
Last week	803	7,058	10,107	2,508	855
Last year	723	3,682	3,632	720	155

*1,028,000 bus bonded.

SHIPMENTS

Primary points—					
Chicago	106	284	1,139	514	84
Duluth	..	13	4	141	9
Indianapolis	..	45	310	100	..
Kansas City	128	512	357	28	..
Milwaukee	10	2	205	20	27
Minneapolis	147	656	487	757	244
Omaha	..	164	499	134	..
Peoria	56	55	680	24	2
Sioux City	..	..	279	..	..
St. Joseph	..	85	98	22	..
St. Louis	128	201	222	90	44
Wichita	..	216	..	..	..
Totals	575	2,233	4,280	1,848	410
Seaboard—					
Baltimore	..	420	..	..	..
New York	..	784	..	..	..
Philadelphia	..	206	..	..	..
Totals	..	1,410*	..	..	..
Grand totals	575	3,643	4,280	1,848	410
Last week	557	3,845	4,678	1,988	485
Last year	521	2,362	2,357	681	196

*Bonded. ‡Some allowance should be made for duplication.

Flaxseed Receipts, Shipments and Stocks

Receipts, shipments and stocks of flaxseed at principal primary points for the week ending Feb. 7, in thousand bushels, with comparisons:

	Receipts		Shipments		Stocks	
	1942	1941	1942	1941	1942	1941
Minneapolis	192	95	24	29	3,347	4,536
Duluth	..	42	28	..	1,357	318

Millfeed Receipts and Shipments

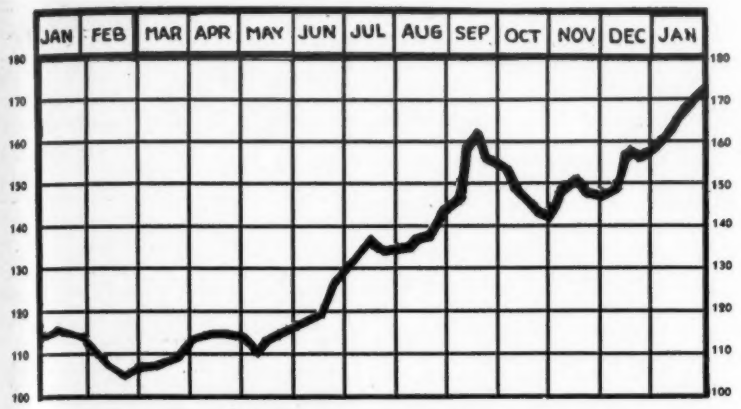
Receipts and shipments of millfeed at the principal distributing centers for the week ending Feb. 7, in tons, with comparisons:

	Receipts		Shipments	
	1942	1941	1942	1941
Minneapolis	...	...	10,400	5,750
Kansas City	2,225	2,950	4,350	5,625
Philadelphia	260	360	...	...
Milwaukee	20	...	2,320	2,500

FEED PRICE MOVEMENT THE PAST YEAR

1935-36=100

A Weighted Average of Principal Feedstuffs as Determined by the Bureau of Agricultural Economics



WHEAT AND WHEAT FLOUR STOCKS HELD BY MILLS

The Department of Commerce reports the following statistics on stocks of wheat and wheat flour held by mills at the close of the quarterly period ending Sept. 30, 1941. Reports were received from 815 milling concerns owning or operating 975 mills. These mills accounted for 93.3% of the total wheat flour production (111,368,727 bbls) as shown by the returns of the biennial census of manufactures for 1939. Of the 815 concerns reporting, 14 held no stocks of wheat or flour on Dec. 31, 1941. Data on stocks as of Sept. 30, June 30 and March 31, 1941, are presented for comparison. Wheat and wheat flour stocks held by mills on Dec. 31, Sept. 30, June 30 and March 31, 1941:

	Dec. 31	Sept. 30	June 30	March 31
Number of milling concerns reporting	815	817	841	837
Number of mills represented	975	977	1,001	997
Daily capacity in barrels of wheat flour	562,013	563,688	564,529	568,079
Per cent of United States wheat flour output*..	93.3	93.6	93.3	94.1
	Bushels	Bushels	Bushels	Bushels
Total wheat stocks	191,006,346	215,532,598	129,155,215	106,825,283
Owned by mills	128,913,277	147,464,622	91,166,414	76,365,980
Stored for others	62,093,609	68,067,976	37,988,801	30,459,303
In mills and mill elevators attached to mills, totals	126,516,107	144,987,841	87,591,620	72,150,757
Owned by mills	88,313,755	103,457,881	63,326,774	54,298,424
Stored for others	38,202,352	41,529,960	24,264,846	17,852,333
In all other positions, total	64,490,239	70,544,757	41,563,595	34,674,526
Owned by mills, totals	40,599,522	44,006,741	27,839,640	22,067,556
In country elevators	6,564,937	8,100,386	3,277,799	4,230,946
In public terminal elevators	7,586,589	14,368,410	5,012,688	3,166,544
In private terminal elevators‡	7,742,348	6,393,008	3,856,687	1,690,435
In transit and bought to arrive	18,705,648	15,144,937	15,692,466	12,979,631
Stored for others, totals	23,890,717	26,538,016	13,723,955	12,606,970
Wheat flour stocks held by mills—	Barrels	Barrels	Barrels	Barrels
In mills, public and private warehouses and in transit—sold and unsold—totals..	3,960,581	4,586,255	4,000,876	3,922,674

*Based on the total output (111,368,727 bbls) of wheat flour as shown by the returns of the Biennial Census of Manufactures, 1939. ‡Not attached to mills.

Millfeed Futures Open Interest

Following table shows open contracts at Kansas City and St. Louis on Feb. 9, in tons. This is the short side of contracts only, there being an equal number of tons open on the long side.

	Kansas City Bran	Kansas City Shorts	St. Louis Shorts	St. Louis Bran	*St. Louis Midds.
February ..	3,300	1,400	300	3,100	500
March	7,450	7,000	800	3,400	1,400
April	6,000	5,000	500	2,900	700
May	3,325	2,800	400	5,800	650
June	4,000	700	..	6,350	500
July	100	..	..	..	..
Totals ...	24,175	16,900	2,000	21,550	3,750

*Delivered in Chicago.

Rye Flour Output

Following is the rye flour output reported to The Northwestern Miller by mills at Chicago, Minneapolis and outside points in the Northwest, in barrels, with comparative figures for the previous week:

	Week ending Jan. 31	Week ending Feb. 7
Four mills	15,914	14,309

Bonded Grain in the United States

Bonded grain in the United States Feb. 7, in bushels (000's omitted):

	Wheat	Corn	Oats	Rye	B'r'y
Baltimore	1,444	..	..	..	..
Boston	2,173	..	..	..	..
Buffalo	4,279	..	40	..	..
Afloat	1,335	..	..	342	..
Milwaukee—					
Afloat	..	..	..	126	729
New York	3,981	..	11	..	..
Afloat	1,247	..	..	..	..
Philadelphia ..	569	3	..	..	..
Totals	15,028	3	51	468	729
Last week	16,156	3	51	468	729
Last year	33,878	1	334	2,757	388

MACHINERY WANTED

WANTED—BRIGHTWOOD BOX MACHINE—Pneumatic scale packaging machine; two flour blenders. Address 4970, The Northwestern Miller, Minneapolis, Minn.

WANT ADS

Advertisements in this department are 5c per word; minimum charge, $1. (Count six words for signature.) Situation Wanted advertisements will be accepted for 2½c per word, 50c minimum. Display Want Ads $4 per inch per insertion. All Want Ads cash with order.

SITUATIONS WANTED

WANTED—POSITION AS PRODUCTION manager; have had laboratory and operative milling experience and understand commercial feed mixing. Address 5453, The Northwestern Miller, Minneapolis, Minn.

IS THERE AN OPENING IN YOUR PLANT for a young and capable superintendent? Now employed; have operated both hard and soft wheat plants; excellent references. Address 5454, The Northwestern Miller, Minneapolis, Minn.

WANTED—POSITION BY EXPERIENCED superintendent miller; uniform quality products guaranteed; age 53; capable any size plant; location of minor importance; executive ability; correspondence solicited. Address 5400, The Northwestern Miller, Minneapolis, Minn.

OPERATIVE MILLER OF AMPLE EXperience wants to make connection with milling concern as superintendent or head miller; Southwest preferred, but would be willing to go anywhere; correspondence solicited. Address 5437, The Northwestern Miller, Minneapolis, Minn.

HEAD MILLER OF 1,400-BBL MILL DEsires superintendent's place; married, age 43; no alcohol or tobacco; good record of production; recommended by some of best known men in milling industry; any size mill considered. Address 5426, The Northwestern Miller, Minneapolis, Minn.

EXPERT MILLER WISHES POSITION AS superintendent or head miller in fair size mill; all systems and products; go anywhere; free yourself of production worries by employing expert miller; no objection to sick mills; references, photo and particulars will be mailed to interested parties. Address 5450, The Northwestern Miller, Minneapolis, Minn.

DO YOU HAVE A PLACE IN YOUR ORganization for a man who knows every baker in Ohio and many of them in Michigan, West Virginia and Kentucky? I have been sales manager for one concern 15 years, and district manager for another concern six years. Can furnish unusual references; circumstances over which I have no control have made this advertisement necessary; also had two years' experience managing bakery. Address 5456, The Northwestern Miller, Minneapolis, Minn.

HELP WANTED

WANTED—THREE GOOD, EXPERIENCED young sweepers, roll tenders and spouters, also capable millwright, and sheet metal layout man. Give full experience, education, school attended. Address 5459, The Northwestern Miller, Minneapolis, Minn.

WANTED BY FLOUR MILLING COMPANY—Warehouse foreman; must be capable of handling men. Give references, experience, age and salary expected. This job offers good opportunity for capable man. Address 5446, The Northwestern Miller, Minneapolis, Minn.

REPRESENTATIVES WANTED—KANSAS mill making quality flour wants active representatives in Michigan, Indiana, Kentucky and West Virginia; give experience and references first letter; strictly brokerage. Address 5448, The Northwestern Miller, 614 Board of Trade, Kansas City, Mo.

MACHINERY FOR SALE

1 GENERAL ELECTRIC 40-H.P. MOTOR; 1 Monarch attrition feed mill, 24-inch; 1 Expert oat huller, 75 bus per hour capacity; 1 buckwheat mill; 1 50-lb pancake mixer; equipment for 3 break and 5 reduction on flour system; belts and pulleys. Easton Roller Mill, Easton, Minn.

IS YOUR MILLING HOUSE IN ORDER

Have you the shortest perpetual inventory method ever devised for use in a mill? Are your cost records, sales data and recoveries so kept as to aid sound management? Increased taxes and governmental controls have multiplied the need for close supervision over your business—essential to earning a profit.

Probably we can help you.

ARTHUR L. CHANDLER

504 Merchants Exchange, St. Louis, Mo.

FOOD RESEARCH LABORATORIES, Inc.

Consultation and Research on

VITAMINS

Assays of Enriched Flour, Bread, etc.

P. B. Hawk, Ph. D., Pres.
B. L. Oser, Ph. D., Dir.
D. Melnick, Ph. D., Ch. Chem.

48-14 Thirty-third Street
LONG ISLAND CITY, N. Y.

Biological, Chemical, Fluorometric and Microbiological Methods

CLEAR

— Flour —

The right clears for your needs, at the right price—and *when you want them.*

L. R. JEWELL & SON—"Flourists"

205-6 New York Life Bldg.—L. D. 74—Kansas City, Mo.

Strictly Flour Brokerage For Over 30 Years

SPRING WHEAT FLOURS

RED WING SPECIAL
BIXOTA
CREAM *of* WEST

PRODUCE BREADS WITH TASTE APPEAL

THE RED WING MILLING CO.

RED WING, MINNESOTA

Wheat Washed with Our Own Artesian Well Water.
Flour Tested and Baked in Our Own Laboratory.

PRESTON-SHAFFER MILLING CO.
MERCHANT MILLERS
ESTABLISHED 1865
SOFT WHITE WINTER WHEAT FLOUR A SPECIALTY
Also Choice Blue-Stem and Hard Spring Patents
WE INVITE EXPORT CORRESPONDENCE
General Offices: WALLA WALLA, WASHINGTON
Mills at Waitsburg, Washington, Freewater, Oregon, and Athena, Oregon—Daily Capacity, 3,000 Bbls
Atlantic Coast Office, RAYMOND F. KILTHAU, Produce Exchange, New York.

Centennial Flouring Mills Co.
GENERAL OFFICE—814 Second Ave. Bldg. SEATTLE, WASH., U. S. A.
DOMESTIC AND EXPORT MILLERS
SOFT WINTER WHEAT FLOURS
BLUESTEM AND HARD SPRING WHEAT FLOURS
MONTANA SPRING WHEAT FLOURS
HI-RATIO CAKE FLOURS
Mills at Tacoma, Spokane, Reardan, Ritzville, Wenatchee, Wash., U.S.A.
Correspondence Solicited
CABLE ADDRESS: "CENTENNIAL—SEATTLE." All Codes

"ROCK RIVER" RYE "OLD TIMES" BUCKWHEAT
"BLODGETT'S" RYE
All Grades—From Darkest Dark to the Whitest White
—Specially Milled by the Blodgett Family—Since 1849
FRANK H. BLODGETT, Inc., Janesville, Wisconsin

WASCO WAREHOUSE MILLING CO.
MILLERS OF
BLUESTEM PATENTS - MONTANA HARD WHEAT PATENTS
PASTRY FLOUR - CAKE FLOUR
Cable Address: "WASCO." All Codes. Daily Capacity 2,000 Barrels
New York Inquiries: Joseph F. Ullrich, Produce Exchange Building The Dalles, Oregon, U.S.A.

Fisher's FOR UNIFORM FLOURS
The largest and most modern flour mill and elevators on the Pacific Coast with storage capacity at our mills of 2,500,000 bushels, together with more than one hundred elevators and warehouses in the choicest milling wheat sections of Montana, Idaho and Washington, insure the uniformity of all Fisher's Flours.
FISHER FLOURING MILLS CO., SEATTLE, U.S.A. Domestic and Export Millers
CLIFF H. MORRIS & Co., Eastern Representative, 25 Beaver Street, New York City

WESTERN MILLING CO.
MONTANA SPRING WHEAT PATENT
BLUESTEM—PATENT
FINEST SOFT WINTER WHEAT PATENT
General Offices: Walla Walla, Washington Mill at Pendleton, Oregon

STANDARD MILLING COMPANY
Millers of
•CERESOTA •ARISTOS •HECKERS

FLOUR and FEED routed via the Chicago & Illinois Midland Railway Co.
goes forward to destination promptly
V. H. WILLIAMS, *Traffic Manager*, 709 Public Service Building, Springfield, Ill.
ERNEST IRBER, *N. W. Agent*, 316 Corn Exchange, Minneapolis, Minn.

MUTUAL MILLERS TALK OVER WAR PROBLEMS

Group of Dog Food Manufacturers Decides to Affiliate With American Feed Manufacturers Association

BUFFALO, N. Y.—Problems arising from America's war effort, particularly the terms and conditions of the Commodity Credit Corp. feed wheat sales program, occupied a large part in the discussions at the annual midwinter convention of the Mutual Millers and Feed Dealers Association at Hotel Buffalo, Feb. 5. An unusually large number of members, as well as representatives of the supply houses, attended the convention. The Corn Exchange of Buffalo and the Buffalo Flour Club acted as hosts to the delegates.

During the convention, a representative group of 19 manufacturers of dog food commodities from widely separated parts of the country held a meeting, also in Hotel Buffalo. George Todd, vice president of the Maritime Milling Co., Buffalo, presided at this meeting. The principal discussion concerned the formation of a Dry Dog Food Association. It was decided that the best interests of both the dog food manufacturers and the feed trade would be served by having these manufacturers affiliated with the American Feed Manufacturers Association. All who were not members of this association were urged to join at once. The American Feed Manufacturers Association was requested to appoint a committee of seven to study dog food problems and maintain the interests of both dry and canned dog food.

A new problem has arisen in the dry dog food industry because of a ruling by the Office of Production Management to the effect that dog food manufacturers will not be supplied with cans. It was decided that a committee should make a thorough study of the problem. An effort is being made to acquaint the public with the fact that in using manufactured dog food, the purchaser is helping to conserve the food supply of the nation since manufactured dog foods are made of by-products from foods for human consumption.

Formal talks were made at the Mutual Millers' convention by Dean Austin Pardue on the "Strength to See It Through"; Ralph M. Field, president of the American Feed Manufacturers Association, on "A Look at the Feed Industry Under War Conditions"; Austin W. Carpenter, president of the Eastern Federation of Feed Merchants, on "Will America Liquidate Its Tradesmen?"

The delegates were welcomed to the city by Elmer Koehnlein, president of the Northeastern Feed Manufacturers Association and manager of Allied Mills, Inc., Buffalo. President Grover Town, Forestville, N. Y., presided at all sessions of the Mutual Millers. Election of officers is held at the summer conventions of the group.

——BREAD IS THE STAFF OF LIFE——

ALLIED MILLS ANNOUNCES INCREASE IN 1941 PROFIT

CHICAGO, ILL.—Allied Mills, Inc., has reported net earnings of $1,953,259, equal to $2.40 a share, compared with $1,362,637, or $1.68 a share in 1940. Excess profit and federal income taxes totaled $1,356,545 last year.

CROWN MILLS
PORTLAND, OREGON
Millers of High Grade Bakers, Family and Export Flours.
"THE FLOUR SUPREME"

AMES HARRIS NEVILLE CO.
PORTLAND, ORE. SAN FRANCISCO CAL.
BURLAP AND COTTON BAGS AND SEWING TWINE

THE QUAKER LINE
Flour — Cornmeal
Commercial Feeds
THE QUAKER OATS CO.
St. Joseph, Mo.

PURE RYE FLOUR
We make a high-grade pure winter rye flour
Ask for sample and quotations.
FISHER & FALLGATTER
WAUPACA, WIS.

BLAIR'S Certified FLOUR FEEDS
BLAIR MILLING CO., Atchison, Kans.

Dependable Hard and Soft Wheat Bakery and Family Flours
SAXONY MILLS
ST. LOUIS, MO.
Our 92nd year

A Real Gem in Flour
KANSAS DIAMOND
Made by
Arkansas City Flour Mills Co.
Arkansas City, Kansas
Daily Capacity 2,000 bbls

"DIAMOND D"
A High Grade Baker's Spring Patent
Milled Under Laboratory Control
from Montana Spring Wheat
Sheridan Flouring Mills, Inc.
SHERIDAN, WYOMING

ACME
BAKERS SHORT PATENT
FLOUR
Also "GOLD DRIFT"
These Brands Meet Every Shop Need
The ACME FLOUR MILLS CO.
Oklahoma City, Okla.

PAGE'S FLOURS
THE THOMAS PAGE MILL CO.
Topeka, Kansas

Better Wheat

(Continued from page 31.)

our advisory committee, consisting entirely of farmers.

During the 10 years that the premium wheat program has been in progress, 1,004,545 bus of wheat has been eligible for premium. This means that over the last 10 years we have premiumized an average of 100,000 bus of grain each year and this is about one fourth of our average annual seed supply of 405,000 bus required in the eight counties.

I have been talking to you in cold figures, but I wish it were possible to have you see the change in attitude of growers and buyers alike since this plan was evolved.

But the presence of undesirable varieties of wheat was not the only problem in the area, for in the high rainfall sections we have weeds a-plenty, particularly in the river bottoms. One source of grief was with those weed seeds that are about the same size as wheat kernels, which of course makes their separation difficult. There were plenty of farm type fanning mills in the country, but no one seemed to be using them. At first I made a desperate attempt to get people to use this equipment they already had, but with little success. I even went so far as to make a drill box survey. In other words, I went from drill to drill in the field and sent each man a record of the seed he was sowing. Usually the news was not very good. At least it was not good enough to cause him to brush the dust and cobwebs off from that old fanning mill stored up overhead in the granary and get it down and use it.

Things went along in this fashion until the second year of our operations. As I was returning one evening from looking at some of the worst seed stocks imaginable in one of our river bottom sections, a soda water truck crowded our car off the road and I had to be pulled out. Needless to say I was not in a very good humor, but after my anger had settled down an idea came to my mind. If that soda water truck, the bread truck, the sign man's truck and a dozen and a half other portable services could use these highways to deliver what they thought, or were able to make somebody else think, was a valuable service, why couldn't I use trucks to deliver a seed cleaning service?

So I immediately induced the milling company to build me a portable cleaning machine on a truck. It consisted of a large type fanning mill, a gas engine as a power unit, and elevators to make it automatic. While the first outfit built in 1932 was very crude, it had a fanning mill with traveling brushes. This kept the screens open, a thing the farmer could not do with the little old farm mill he had once cast aside.

So popular was this first machine that before the season was over a second was assembled and put in operation. Many of us remember the 1932 season, if by nothing else but the fact that wheat was down as low as 33c bu.

In 1933 we started out a fleet of three improved machines with disc separators, seed treaters, and every gadget that seemed usable. These units cost around $1,000 each. But the point I wish to make is that the milling company did not go out and run these machines, but instead turned them over to the township wheat committeemen of every county, under the direction of the county agent and his organization. Committeemen were impressed with the fact that, if these efficient units, costing $1,000 apiece, could be kept busy over a two-month period, the rate for this service could be kept to a minimum. They were convinced that it was the co-operative effort of the community that would keep the price of these cleaning and treating services down. So it was up to them to get and keep a good operating schedule. Meanwhile I was responsible for selecting operators, who are always hired on a commission basis.

The price of cleaning seed wheat right at the granary door has been 4c bu. Three cents per bushel is added where the seed is treated and the machine furnishes the dust. Now you can readily see that these prices are ridiculously low for this type of service. The retail price of the disinfectant dust, new improved creson, costs almost as much as we charge for treating.

You can see that the community setup is very largely responsible for the success of the venture, for if the machines did not have a good full schedule they would have to get a higher rate. If the rate got too high, the volume reached would be so greatly reduced that the project would fail. Someone has to clean and treat seed wheat six or seven weeks before seeding time if these machines have a workable schedule. Co-operation results in this kind of a schedule.

In the immediate area in which I work, Igleheart Bros. has maintained a fleet of seven of these machines, has met all operation costs, paid all upkeep and repair, and has retired every cent of the initial cost. With the help of two private machines, the milling company has cleaned an average of 135,000 bus of seed wheat each year, or roughly one third of the area requirement.

It is useless for me to tell you gentlemen how cleaning one third of the seed in any given area has improved the quality of grain, for you know that yourselves.

Stinking smut has been serious enough to affect materially the crop of whole townships and even a half county at its worst, but the treating service has eliminated that. We have at last reached the point where we treat half of the seed cleaned. We never have insisted that they treat all wheat as we have with oats and barley. However, the percentage of seed wheat treated increases each year until last year it was 53%.

It is not hard for you to picture the vast material improvement that has come from the development of this kind of a service. But one of the greatest boosts was that of morale.

Somebody says, "Heck, Skiver, you never did anything but provide the machine. The farmer did all the work and paid the bill." I replied, "Very true, and moreover he was glad to do it."

The Indiana crop improvement association also took advantage of this development and placed 38 other portable cleaners in other Indiana counties that are now using them on oats, soybeans and winter barley. As a matter of fact, the portable seems to have more of a field in the spring grain areas than in the winter, because the ravages of smut and other seed farm diseases are more serious there than in winter wheat.

Not only have the machines spread throughout Indiana, but also Professor Hackleman has placed 24 in Illinois. Seven

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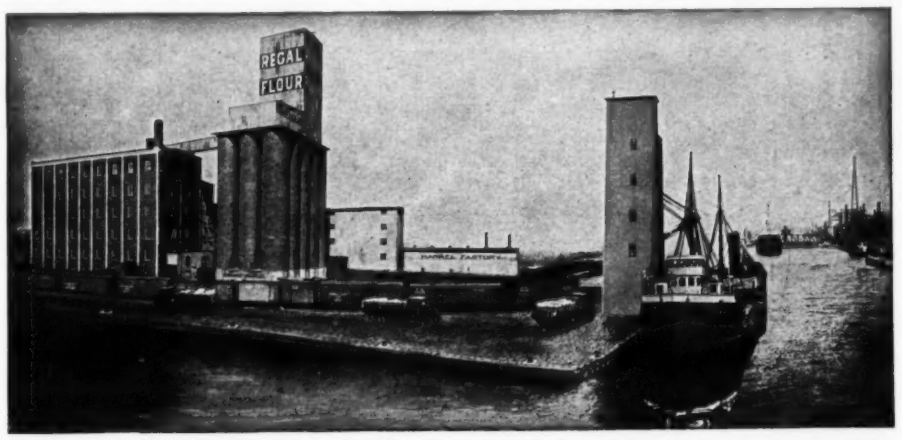

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are now in operation in Ohio and several in eastern states. At the latest count 84 of these units were serving farmers in the corn belt states and in the East.

Along with the heavier rainfall in Indiana, we have some serious pests. One of these is wild garlic which at times has threatened our industry. This plant is not a native of our country but, like a lot of our grief, comes to us from abroad. This weed pest is a perennial and lives over in the soil in a belt 200 to 300 miles wide extending from St. Louis east to the seaboard. The plant thrives in this area because the soil temperatures and system of cultivation are ideal for its propagation.

This plant forms sets on top which mature at the same time as the wheat. The aerial bulblets are the same size as wheat kernels, and, like your rye, no one has ever devised a practical or mechanical means of separation. The very smallest fractions cause gumming of the rolls in the mill and impart offensive odors to the flour.

No small amount of effort has been spent in working out measures of controlling this weed pest. But by careful studies and extended trials we have worked out an efficient, practical method of control known as "The Purdue Garlic Control Plan" and have demonstrated the effectiveness of this in every community.

While we don't claim a complete cure-all, we do assert that we have held this threat to our industry in check, and above all we have offered the growers a constructive solution of this, the most threatening problem of all.

Here again "The Premium Plan" has been of material assistance, for it has offset the ill feeling created by the discount system and has offered a worth while objective to those who are willing to clean up.

This is another example of a positive approach to a serious menace, for we have worked out and demonstrated a practical farm control of this smelly pest.

Our latest adventure in the field of crop improvement is the development of what we call a new "Show Window" for wheat. In this we have developed something far more comprehensive and instructive than the showing of the peck sample. We have developed a "Ten-Acre Wheat Contest," where the grower enters his field of 10 acres in competition with those of others. Yes, even more than that, he enters his system of soil management, for these 10-acre fields are judged by a score card where one third of the total points are admitted to the crop history and soil management of the field.

This 10-acre contest is in some respects typed after the five-acre corn contests that have been so instructive in Indiana and other corn belt states. Here owners enter their best 10 acres on a formal application blank where the crop history and methods of handling fields are listed. This is all done without cost or obligation to any one.

The township committee with the aid of a score card—and I wish to emphasize the use of the score card—picks the best 10-acre field in each township.

Then a committee of three farmers from an adjoining county (again with the use of a score card) places the fields within the county. These you will notice are exchange committees. A special committee selected by our governing body chooses the champion and reserve champion fields of the area.

County winners are today enjoying their prizes which were trips to the Purdue campus during our Agricultural Conference Week or Farmers Week as it is called in some states. These prizes are not gifts from anyone, but come from the earnings of the portable seed cleaning and treating machine. This project must earn these prizes before they can be awarded. The improvement of seed wheat by cleaning and treating machines routed by township committeemen must provide the funds for these prizes.

When groups of practical farmers go to look at fields through the columns of a carefully designed score card, they cannot help but learn something. They see and actually score the benefits of clean seed, and they can't help but appreciate the benefit of all soil improving practices and weed control.

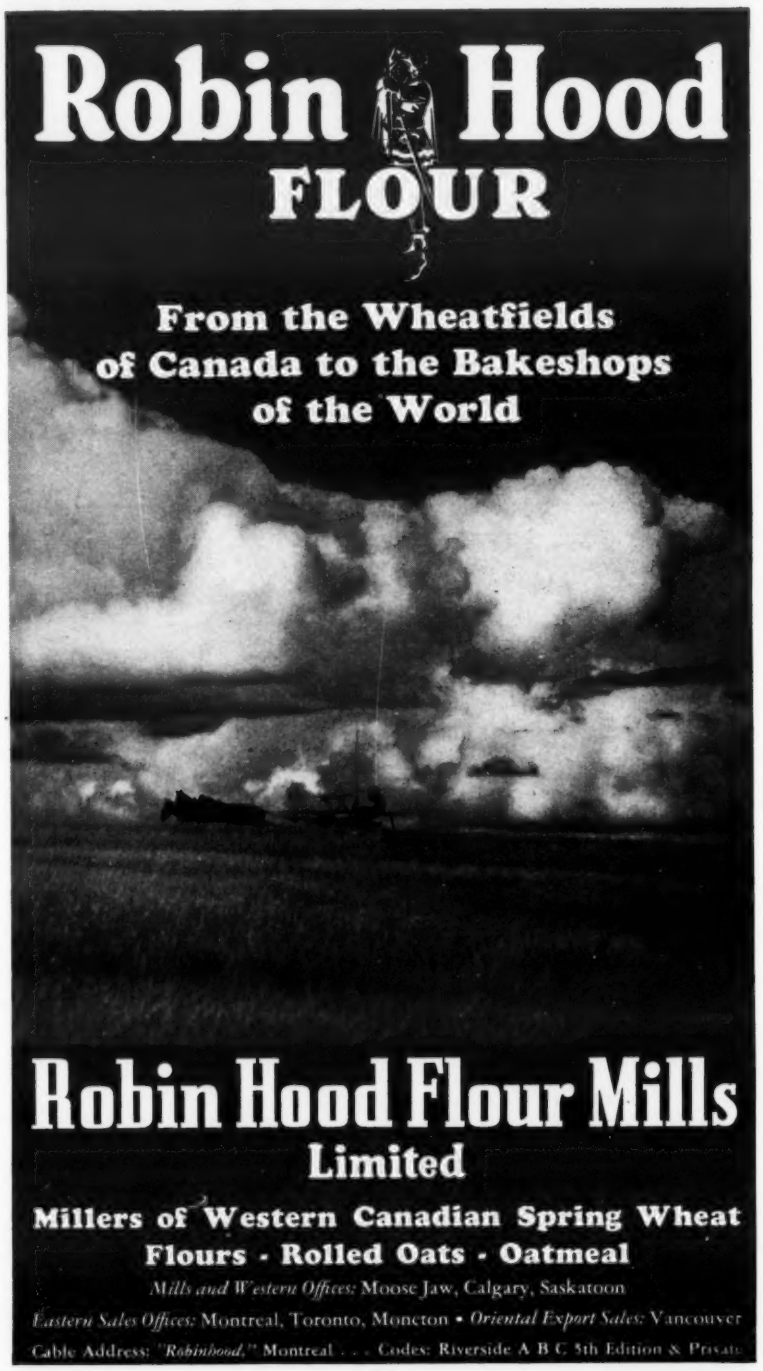
This we feel is a very positive approach to this problem so vital to both the grower and the processor. This week and on this very day, our county winners are enjoying a trip to Purdue awarded them by committees of farmer judges and paid for out of the proceeds of improvement efforts of their neighbors—namely, the returns from the portable seed cleaning and treating units.

Now I have come a long way to bring you a message not of the things I have done but of the things I have helped good Hoosier farmers and millers to do for themselves. For after all our problem and yours is one not of the processor or miller alone but of the farmer, the grain dealer, and everyone in the area. Perhaps some of our methods will not apply to your conditions out here, but our school of thought will apply to your problems, for human nature is not so different.

You have a large reserve of our greatest natural resource, "plant food," in the soils of Kansas. You also have an enviable supply of humus, that factor so important in holding water. But the continual drain on these two factors is going to tell. It is safe to say that the management of your soils during the next 25 years is going to be far more difficult and require far more ability than it has during the past 25 years.

Now when fertility levels and humus content begin to fall, don't make the same mistake we did in Indiana. Don't place all your money on the nose of new varieties that seem to be good foragers for plant food and moisture without first knowing whether these varieties will process into finished products that will maintain the reputation of the state. Let's not lose sight of the fact that this wheat we grow is for food, although the ultimate consumer may be many miles away. Let's not lose sight of the fact that wheat today is processed first in the mill and again in the bakeshop. The market premium and reputation that our crop and yours enjoy is going to depend not alone on the bushels we produce but how well the end product fits into our complicated merchandising system.

This is a complex world in which we live today. You who grow this wheat both here and in Indiana are many miles and many processing and merchandising steps from the final consumers. Let's not grow this wheat just to weigh 60 lbs, but grow it to fit into the distribution system of a great country, whether it be army bakeshops or commercial ones.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UNSUSPECTED POWERS

Maurice Barrymore, father of the now famous Ethel, John and Lionel, was strolling down Fifth Avenue one day, when Sidney Rosenfeld, the playwright, rushed up to him and exclaimed, "Oh, Maurice, have you heard of my misfortune?"

"No," replied Barrymore sympathetically, "what's the matter?"

"My little boy, who is only five years old, got hold of my new play and tore it to tatters!"

"Remarkable, remarkable," exclaimed the great actor. "Imagine a child only five years old being able to read."—*Wall Street Journal.*

CRUEL WORLD?

Lady—Have you ever been offered work?

Itinerant—Only once, madam. Aside from that I've had nothing but kindness.

TRAVELER

A sailor was boasting about the different places he had visited. The South Seas, New Zealand, the Arctic Circle—all came alike to him. A woman who happened to overhear the bragging remarked:

"Then you must know a lot about geography?"

Sailor (quickly): Well, madam, not a great lot. We put in there once for coaling, but I never went ashore.

FAST WORK

A certain famous motor car manufacturer advertised that he had put a car together in seven minutes. The next evening he was called on the phone at dinner time and asked if it were so.

"Yes," was the reply. "Why?"

"Oh, nothing. But I believe I've got the car."

TOTAL LOSS

An old negro was complaining that the railroad would not pay him for his mule, which it had killed—nay, would not even give him back his rope.

"What rope?" he was asked.

"Why, suh," he answered, "de rope dat I tied de mule on de track wif."—*Typo Graphic.*

ANIMAL CRACKER

Rastus—Here's a telegram from our boss in Africa. He's sending us some lions' tails.

Sam—Lions' tails. Whut in de world am you talkin' about?

Rastus—Read dis telegram. He says: "Just captured two lions. Sending details by mail!"

WHY BOTHER?

Thoughtful Friend—My good man, why don't you take the street car home?

Illuminated One—Sh' no ushe. Wife wouldn't let me keep it in the houshe.

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INDEX·OF·ADVERTISERS

"A" series of page numbers used to index advertisements appearing in Section Two of this issue.

Acme-Evans Co., Indianapolis, Ind.. 8
Acme Flour Mills Co., Oklahoma City, Okla. 40
Alberta Pacific Grain Co., Ltd., Winnipeg, Man. 42
Allen, James, & Co. (Belfast), Ltd., Belfast, Ireland 47
Alva Roller Mills, Alva, Okla.
Amber Milling Co., Minneapolis 30
Amendt Milling Co., Monroe, Mich. 46
American Bakers Machinery Co., St. Louis, Mo.
American Cyanamid & Chemical Corp., New York, N. Y.
American Dry Milk Institute, Inc., Chicago, Ill.
American Machine & Foundry Co., New York, N. Y.
Ames Harris Neville Co., Portland, Oregon, San Francisco, Cal. 40
Anheuser-Busch, Inc., St. Louis, Mo.
Appraisal Service Co., Inc., Minneapolis. 24a
Archer-Daniels-Midland Co., Minneapolis 46
Arkansas City Flour Mills Co., Arkansas City, Kansas 40
Arnold Milling Co., Sterling, Kansas. 31
Atkinson Milling Co., Minneapolis. 30

Baltic Co., Copenhagen, Denmark..
Barnett & Record Co., Minneapolis.. 21a
Baur Flour Mills Co., St. Louis, Mo.
Baxter, A. E., Engineering Co., Buffalo.. 18a
Bay State Milling Co., Winona, Minn. 23
Beckenbach, Clem L., Kansas City, Mo.. 46
Bemis Bro. Bag Co., Minneapolis, St. Louis, etc. 19a
Bernheimer, Harry N., Philadelphia, Pa.
Black Bros. Flour Mills, Wymore, Neb.. 22
Blair Milling Co., Atchison, Kansas. 40
Blake, J. H., New York, N. Y.
Blodgett, Frank H., Inc., Janesville, Wis. 40
Boonville (Mo.) Mills Co.
Bowersock M. & P. Co., Lawrence, Kan.. 30
Brey & Sharpless, Philadelphia, Pa.
Broenniman Co., Inc., New York, N. Y..
Brownold, M. S., Co., New York, N. Y. 47
Brown's Hungarian Corp., New York.
Buckeye Cereal Co., Massillon, Ohio. 46
Buhler Bros., Inc., New York, N. Y. 26a
Buhler Mill & Elevator Co., Buhler, Kansas 30
Bunge Elevator Corp., Minneapolis. 46

Cameron, John F., & Co., Aberdeen, Scotland
Canadian Bag Co., Ltd., Montreal, Toronto 44
Canadian-Bemis Bag Co., Ltd., Winnipeg, Vancouver 42
Canadian Mill & Elevator Co., El Reno, Okla. 30
Cannon Valley Milling Co., Minneapolis. 38
Capital Flour Mills, Inc., St. Paul, Minn. 8
Cargill, Inc., Minneapolis. 46
Carson, Robert, & Co., Ltd., Glasgow. 47
Centennial Flouring Mills Co., Seattle. 40
Central Bag & Burlap Co., Chicago, Ill.. 20a
Chandler, Arthur L., St. Louis, Mo. 39
Chase Bag Company—New York; Chicago; Philadelphia; Buffalo; Chagrin Falls, Ohio; Toledo; Goshen, Ind; Milwaukee; Minneapolis; Kansas City; St. Louis; Dallas; New Orleans; Reidsville, N. C; Portland, Oregon. 2
Chatfield & Woods Sack Co., Cincinnati. 23a
Checkerboard Elevator Co., St. Louis. 16a
Chelsea Milling Co., Chelsea, Mich. 22
Chicago & Illinois Midland Railway Co. 40
Chicago, South Shore & South Bend Railroad, Chicago, Ill.
Chickasha Milling Co., Chickasha, Okla.. 30
Chubb & Son, New York, N. Y. 22
Coatsworth & Cooper, Toronto, Can.
Colborne Mfg. Co., Chicago, Ill.
Coleman, David, Inc., New York. 47
Collins Flour Mills, Inc., Pendleton, Oregon
Colorado Milling & Elevator Co., Denver, Colo. 4
Columbia Chemical Division, New York, N. Y. 9a
Columbus Laboratories, Chicago, Ill. 23a
Commander Milling Co., Minneapolis.
Commander-Larabee M. Co., Minneapolis 8
Commercial Milling Co., Detroit, Mich. 22
Consolidated Flour Mills Co., Wichita, Kansas 8
Continental Grain Co., Kansas City, Mo. 46
Corn Products Sales Co., New York.
Coventry, Sheppard & Co., London, England 47
Craig, R. Hunter, & Co., Ltd., Glasgow, Scotland 47
Crawford & Law, Glasgow, Scotland. 47
Cream of Wheat Corp., Minneapolis. 46
Crookston Milling Co., Crookston, Minn.. 38
Crown Mills, Portland, Oregon. 40
Cuban Flour Review, Havana, Cuba.

Dairymen's League Co-operative Association, Inc., New York, N. Y..
Davis-Noland-Merrill Grain Co., Kansas City, Mo. 19
Day Co., Minneapolis, Minn. 12a
De Lisser, Andrew, New York, N. Y.
De Stefano, Ulysses, New York, N. Y.
Denver Alfalfa Milling & Products Co., Lamar, Colo., St. Louis, Mo. 45
Deutsch & Sickert Co., Milwaukee, Wis..
DeWitt Hotels
Diamond Crystal Salt Co., Inc. 4a
Dickinson, W. V., New York.
Dixie-Portland Flour Co., Memphis, Tenn. 47
Dobry Flour Mills, Inc., Yukon, Okla.
Dominion Flour Mills, Ltd., Montreal. 43
Doughnut Corporation of America, New York, N. Y.
Dow Chemical Co., Midland, Mich. 8a
Duluth Universal Milling Co., Duluth. 38
Dunwoody Institute, Minneapolis, Minn..

Eagle Roller Mill Co., New Ulm, Minn. 8
Eckhart, B. A., Milling Co., Chicago. 10a
Enns Milling Co., Inman, Kansas. 30
Enrights All-o-The-Wheat Flour Co., St. Paul, Minn.
Essmueller Co., St. Louis and Kansas City, Mo. 7a
Evans Milling Co., Indianapolis, Ind. 38

Fargo Mill Co., Fargo, N. D. 30
Farquhar Bros., Glasgow, Scotland.. 47
Farmers & Merchants Mig. Co., Glencoe, Minn. 23
Farwell & Rhines Co., Watertown, N. Y. 27
Feast, C. E., & Co., London, England. 47
Federal Mill, Inc., Lockport, N. Y. 38
Fennell, Spence & Co., Liverpool, Eng. 47
Finger Lakes and Hudson Flour Mills, Inc., Geneva, N. Y. 31
First National Bank in St. Louis. 18
Fisher & Fallgatter, Waupaca, Wis. 40
Fisher Flouring Mills Co., Seattle, Wash. 40
Florelius & Ulsteen, A/S, Oslo, Norway.. 47
Flour Mills of America, Inc., Kansas City, Mo. 5
Food Research Laboratories, Inc., Long Island City, N. Y. 39
Forster Mfg. Co., Inc., Wichita, Kansas. 2a, 27a
Fort Garry Flour Mills Co., Ltd., Montreal, Que.
Fort Morgan Mills, Fort Morgan, Colo..
Franco, Francis M., New York, N. Y.
Fulton Bag & Cotton Mills, Atlanta, Dallas, New York, New Orleans, St. Louis, Minneapolis, Kansas City, Kan.. 24a

Gallatin Valley Milling Co., Belgrade, Mont.
Garland Milling Co., Greensburg, Ind.
General Baking Co., New York, N. Y. 47
General Mill Equipment Co., Kansas City, Mo. 23a
General Mills, Inc., Minneapolis. Cover 4
Gillespie Bros., Ltd., Sydney, N. S. W. 45
Globe Milling Co., Watertown, Wis. 41
Goerz Flour Mills Co., Newton, Kansas.. 38
Goethel, Alfred C., Co., Milwaukee, Wis.
Gooch Milling & Elevator Co., Lincoln, Neb. 27
Goodhue Mill Co., Minneapolis.
Great Star Flour Mills, Ltd., St. Mary's, Ont. 44
Greenbank, H. J., & Co., New York. 47

Haaky Mfg. Co., St. Paul, Minn. 21a
Habel, Armbruster & Larsen Co., Chicago, Ill. 47
Hamilton, Archibald, & Sons, Glasgow.. 47
Hamm, J. M. & C. M., London, England.
Hardesty Milling Co., Dover, Ohio. 30
Harris Bros. & Co., Ltd., London, England 47
Hart-Bartlett-Sturtevant Grain Co., Inc., Kansas City, Mo. 46
Hart-Carter Co., Minneapolis, Minn. 28a
Heide, Henry, Inc., New York
Hoffmann-La Roche, Inc., Nutley, N. J.. 5a
Holland Engraving Co., Kansas City. 22
Horan, Hubert J., Philadelphia, Pa. 47
Horner & Wyatt, Kansas City, Mo. 23a
Howes, S., Co., Silver Creek, N. Y. 14a, 15a
Howie, The J. K., Co., Minneapolis. 16a
Hubbard Milling Co., Mankato, Minn. 38
Hunter Milling Co., Wellington, Kansas. 27

Igleheart Bros., Inc., Evansville, Ind. 46
Imbs, J. F., Milling Co., St. Louis. 33
Innis, Speiden & Co., New York, N. Y. 16a
International Milling Co., Minneapolis.. Cover 2
Ismert-Hincke Milling Co., Kansas City, Mo. 30

Jaeger, Frank, Milling Co., Danville (P. O., Astico), Wis.
Jennison, W. J., Co., Minneapolis. 30
Jewell, L. R., Kansas City, Mo. 39
Johansen, Anth., & Co., Oslo, Norway.
Johnson-Herbert & Co., Chicago, Ill. 47
Jones-Hettelsater Construction Co., Kansas City, Mo. 20a
Joseph, I. S., Co., Inc., Minneapolis. 47

Kalamazoo Vegetable Parchment Co., Kalamazoo, Mich.
Kansas Flour Mills Co., Kansas City, Mo.
Kansas Milling Co., Wichita, Kansas. 25a
Kelly-Erickson Co., Omaha, Neb. 47
Kelly Flour Co., Chicago, Ill. 47
Kelly, William, Milling Co., Hutchinson, Kansas 18
Kent, Percy, Bag Co., Inc., Kansas City, Mo. 23a
Kimpton, W. S., & Sons, Melbourne, Australia 45
King, H. H., Flour Mills Co., Minneapolis, Minn. 27
King Midas Flour Mills, Minneapolis, Minn. 27
King Milling Co., Lowell, Mich. 23
Kipp-Kelly, Ltd., Winnipeg, Man.
Knighton, Samuel, & Sons, Inc., New York, N. Y. 47
Koerner, John E., & Co., New Orleans, La. 47

Laboratory of Vitamin Technology, Chicago, Ill. 8
La Grange Mills, Red Wing, Minn. 26
Lake of the Woods Milling Co., Ltd., Montreal, Que. 43
Lakeside Milling Co., Ltd., Toronto, Can. 44
Larabee Flour Mills Co., Kansas City, Mo.
Lee, H. D., Flour Mills Co., Salina, Kansas 38
Lever Bros. Co., Cambridge, Mass.
Lexington Mill & Elevator Co., Lexington, Neb.
Löken & Co., A/S, Oslo, Norway. 47
Long, W. E., Co., Chicago, Ill. 41
Lund, S., Oslo, Norway. 47
Lyon & Greenleaf Co., Ligonier, Ind. 30
Lysle, J. C., Milling Co., Leavenworth, Kansas 38

McConnell & Reid, Ltd., Glasgow, Scotland 47
McCormick Co., Inc., Pittsburgh.
McKinnon & McDonald, Ltd., Glasgow, Scotland
Madsen, Otto, Copenhagen, Denmark. 47
Mann, F. W., East St. Louis, Ill.
Maple Leaf Milling Co., Ltd., Toronto, Ont., Can. 44
Mardorf, Peach & Co., London, England 47
Marsh & McLennan, Minneapolis. 41
Marsh & McLennan, Inc., New York.
Meelunie, N.V. Alg. Handel en Industrie Mij., Amsterdam, Holland
Mennel Milling Co., Toledo, Ohio.
Merck & Co., Rahway, N. J. 13a
Mid-Kansas Milling Co., Clay Center, Kansas
Midland Flour Milling Co., Kansas City, Mo.
Mid-West Laboratories Co., Columbus, Ohio 23a
Mill Mutual Fire Prevention Bureau, Chicago 18a
Miner-Hillard Milling Co., Wilkes-Barre, Pa. 31
Minot Flour Mill Co., Minot, N. D. 46
Monsanto Chemical Co., St. Louis, Mo. 6a
Montana Flour Mills Co., Great Falls. 41
Moore-Lowry Flour Mills Co., Kansas City, Mo. 27
Moore-Seaver Grain Co., Kansas City. 46
Morris, Cliff H., & Co., Inc., New York.
Morrison Milling Co., Denton, Texas. 31
Morrison, Wm., & Son, Ltd., Glasgow, Scotland 47
Moundridge Milling Co., Moundridge, Kansas 30

National Grain Yeast Corp., Belleville, N. J.
National Milling Co., Minneapolis.
Neahr, M. J., & Co., Chicago, Ill. 18a
Nebraska Consolidated Mills Co., Omaha, Neb. 27
Neill, Robert, Ltd., Glasgow, Scotland.
New Century Co., Chicago, Ill.
New Era Milling Co., Arkansas City, Kansas 19
New Jersey Flour Mills Co., Clifton, N. J.
Newton Milling & Elevator Co., Newton, Kansas 30
New Ulm Roller Mill Co., New Ulm, Minn. 23
Norenberg & Belsheim, Oslo, Norway. 47
Northern States Power Co., Minneapolis. 26a
Northwestern Elevator & Mill Co., Toledo, Ohio 8
Northwestern National Bank & Trust Co., Minneapolis, Minn.
Norton, Willis, Co., Wichita, Kansas. 46
Nor-Vell Sieve Co., Kansas City, Mo. 21a
Novadel-Agene Corp. Cover 3

Ogilvie Flour Mills Co., Ltd., Montreal, Que. 42
Old Fashioned Millers, Inc., St. Paul, Minn.
Osieck & Co., Amsterdam, Holland.

Page, Thomas, Mill Co., Topeka, Kansas 40
Paniplus Company, Kansas City, Mo.
Parrish & Heimbecker, Ltd., Winnipeg, Man.
Pearlstone, H. S., New York, N. Y.
Peek Bros., Little Rock, Ark.
Petersen Oven Co., Chicago.
Pfeffer Milling Co., Lebanon, Ill. 30
Pillman & Phillips, London, England. 47
Pillsbury Flour Mills Co., Minneapolis. 1
Pratt, R. C., Toronto, Ont. 45
Preston-Shaffer Milling Co., Waitsburg, Wash. 40
Prina, Frank R., Corp., New York. 46
Procter & Gamble, Cincinnati, Ohio.

Quaker Oats Company, St. Joseph, Mo. 40

Rapid River Milling Co., Rapid City, S. D.
Red River Milling Co., Fergus Falls, Minn. 30
Red Star Yeast & Products Co., Milwaukee, Wis.
Red Wing Milling Co., Red Wing, Minn. 39
Richardson, James, & Sons, Ltd., Winnipeg, Man. 44
Richmond Mfg. Co., Lockport, N. Y. 20a
Riegel Paper Corp., New York, N. Y.
Robin Hood Flour Mills, Ltd., Moose Jaw, Sask. 45
Robinson Milling Co., Salina, Kansas. 31
Robinson, Thomas, & Son, Ltd., Rochdale, England 16a
Rodney Milling Co., Kansas City, Mo. 38
Ross Milling Co., Ottawa, Kansas. 22
Russell, D. T., & Baird, Ltd., Glasgow, Scotland 47
Russell-Miller Milling Co., Minneapolis, Minn. 23
Russell Milling Co., Russell, Kansas. 27

St. Cloud Milling Co., St. Cloud, Minn. 23
St. Joseph (Mo.) Testing Laboratories, Inc. 23a
St. Lawrence Flour Mills Co., Ltd., Montreal, Canada 44
Sandusky Cooperage & Lumber Co., St. Louis, Mo.
Saxony Mills, St. Louis, Mo. 40
Schultz, Baujan & Co., Beardstown, Ill. 22
Scott, Mungo, Ltd., Sydney, N. S. W., Australia 45
Security Flour Mills Co., Abilene, Kansas 38
Shellabarger Mills, Salina, Kansas. 38
Sheridan Flouring Mills, Inc., Sheridan, Wyo. 40
Shevelove, J. J., Newark, N. J.
Short, J. R., Milling Co., Chicago, Ill.
Siebel Institute of Technology, Chicago. 47
Simonds-Shields-Theis Grain Co., Kansas City, Mo. 19
Singer Sewing Machine Co., New York, N. Y.
Smith, Sidney, Flour, Feed & Grain, Ltd., London, Eng. 47
Smyth, Ross T., & Co., Ltd., London, England 47
Spillers, Ltd., London, England. 42
Spindler, L. G., New York.
Springfield (Minn.) Milling Corp. 23
Stanard-Tilton Milling Co., St. Louis.
Standard Brands, Inc., New York, N. Y..
Standard Milling Co., Chicago, Ill. 40
Stannard, Collins & Co., London, Eng. 47
Stratton Grain Co., Milwaukee, Wis.
Strisik, S. R., Co., New York. 47
Superior Separator Co., Minneapolis, Minn. 23a
Swift & Co., Chicago

Tanner-Duncan-Siney Corp., New York, N. Y.
Taylor, Andrew, & Co. (Glasgow), Ltd., Glasgow, Scotland 47
Tennant & Hoyt Co., Lake City, Minn. 27
Thomas, A. Vaughan, London, England.
Thompson, E. S., New York City.
Tobler, Ernst & Traber, Inc., New York, N. Y. 22a
Tri-State Milling Co., Rapid City, S. D..
Twin City Machine Co., Minneapolis, Minn. 23a

Uhlmann Grain Co., Kansas City, Mo., and Chicago, Ill. 25a
United Grain Growers, Ltd., Winnipeg, Man. 42
Urban, George, Milling Co., Buffalo. 8

Valier & Spies Milling Company, St. Louis, Mo. 5
Van Dusen Harrington Co., Minneapolis and Duluth, Minn. 46
Victor Chemical Works, Chicago, Ill. 3
Virginia-Carolina Chemical Corp., Richmond, Va.
Voigt Milling Co., Grand Rapids, Mich.. 30
Vreeswijk, Gebroeders, Utrecht, Holland 47

Wabasha Roller Mill Co., Wabasha, Minn. 26
Wall-Rogalsky Milling Co., McPherson, Kansas 33
Wallace & Tiernan Co., Inc., Newark, N. J. Cover 3
Walnut Creek Milling Co., Great Bend, Kansas 27
Wamego Milling Co., Wamego, Kansas.
Wasco Warehouse Milling Co., The Dalles, Oregon 40
Watson & Philip, Ltd., Dundee, Scotland 47
Watson Higgins Milling Co., Grand Rapids, Mich. 46
Weber Flour Mills Co., Salina, Kansas.
Weevil-Cide Co., The, Kansas City, Mo. 23a
Wesson Oil & Snowdrift Sales Co., Chicago, Ill.
Western Assurance Co., Toronto, Ont. 45
Western Canada Flour Mills Co., Ltd., Toronto, Ont. 42
Western Milling Co., Pendleton, Oregon. 40
Western Star Mill Co., Salina, Kansas. 6
Western Waterproofing Co., St. Louis and Kansas City, Mo. 23a
White & Co., Baltimore, Md. 47
Whitewater Flour Mills Co., Whitewater, Kansas 22
Wichita (Kansas) Flour Mills Co. 33
Williams Bros. Co., Kent, Ohio. 30
Winthrop Chemical Co., Inc., New York, N. Y.
Wisconsin Milling Co., Menomonie, Wis. 23
Wolf Milling Co., Ellinwood, Kansas. 22
Woods Mfg. Co., Ltd., Montreal, Que. 43

Zeleny Thermometer Company, Chicago, Illinois 26a

Quiz

"WHAT'S MORE ALIKE THAN 2 PEAS IN A POD?"

The answer begins in a laboratory and ends in your FLOUR

Nature went a long way toward uniformity with the "peas in a pod," but it loses out in comparison to modern laboratory methods for maintaining the uniform composition of Novadelox, week in and week out. Both in chemical composition and physical characteristics, Novadelox is held to close limits of uniformity by continuous scientific control.

Thus, when you buy Novadelox, you can be sure of full value and the exact degree of whitening action you desire. You can count on the fact that . . . under the same conditions . . . Novadelox will keep producing exactly the same results.

Novadelox acts with predictable effectiveness and rapidity (whitening action is complete within 24 hours). It will give your flour a color and brilliance that is a delight to the buyer's eye. And if you consider the latitude it allows you in blending a wide variety of wheats, and the costly hazardous storage it helps to eliminate, you'll find Novadelox a money-saver as well as a sales-builder. NA72

3 KEYS
to a Whiter, Brighter Flour
1. FINER PARTICLES for a faster reaction
2. GREATER DISPERSION for even whiteness
3. UNIFORM COMPOSITION for consistent results
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NOVADEL-AGENE

Agents: WALLACE & TIERNAN CO., INC., Belleville, N. J.

AGENE FOR MATURING

NOVADEL FOR COLOR

Tomorrow—whole wheat bread will score!

". . . all the nutritional benefits of the natural grain." Yesterday the above phrase meant little or nothing to the average consumer. Today, it begins to take on significance. *Tomorrow it will score new gains in consumer preference for whole wheat!*

Your government headlines whole wheat bread as a keystone food for the balanced diet. Public response is bound to follow. Intense nation-wide education is beginning to take effect. Whole wheat bread sales are definitely on the upswing.

Naturally, this whole wheat and wheaten publicity is still in the educational stage. Lifetime habits can't be changed in a day, or a month. But already new consumer importance is being attached to the famous food values of whole wheat. Whole wheat bread is a *protective* food, a bread abundant in precious B vitamins and minerals that millions need for better health defense.

Sales-minded bakers are anticipating this new demand for whole wheat and wheaten products. They are preparing for tomorrow, *today*.

Right now is the time to tie in locally, to get in on the ground floor of the whole wheat boom. *Right now* your General Mills man offers his customers a practical, inexpensive way to build whole wheat bread sales as profitable specialty business *in addition to your primary white bread volume*.

A powerful whole wheat merchandising campaign *for your use* has been worked out. It's a colorful, soundly-planned campaign that's got plenty of "sock and sell" to it. And there is separate copy for Whole Wheat or Wheaten breads. You can feature either.

Ask your General Mills man to show you this super-timely promotion — and describe his complete line of top-quality Whole Wheat Flours for every shop requirement. He offers *a Complete Flour Service*.

Your General Mills Man Will Help You

MEET TOMORROW *TODAY*

Use this idea-packed advertising material to help build SALES . . .

Full-color posters and display cards that grab attention and *sell*.

Three catchy, convincing news ads for Whole Wheat, three for Wheaten bread.

Interesting meal time idea folders that tell your customers what whole-wheat products can do for them.

Dollar for Dollar, your General Mills Man offers More

General Mills, Inc.

PRODUCTS CONTROL DEPARTMENT